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INTERNS' NUMBER

CLINICAL MEDICINE AND SURGERY

CMS

VOLUME 44 June, 1937 NUMBER 6

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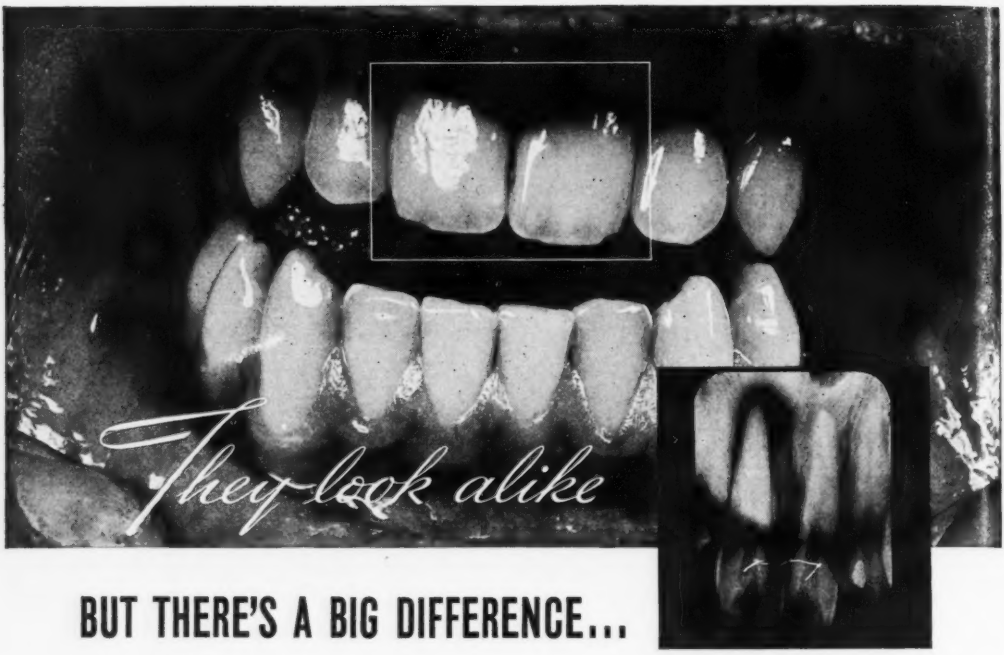

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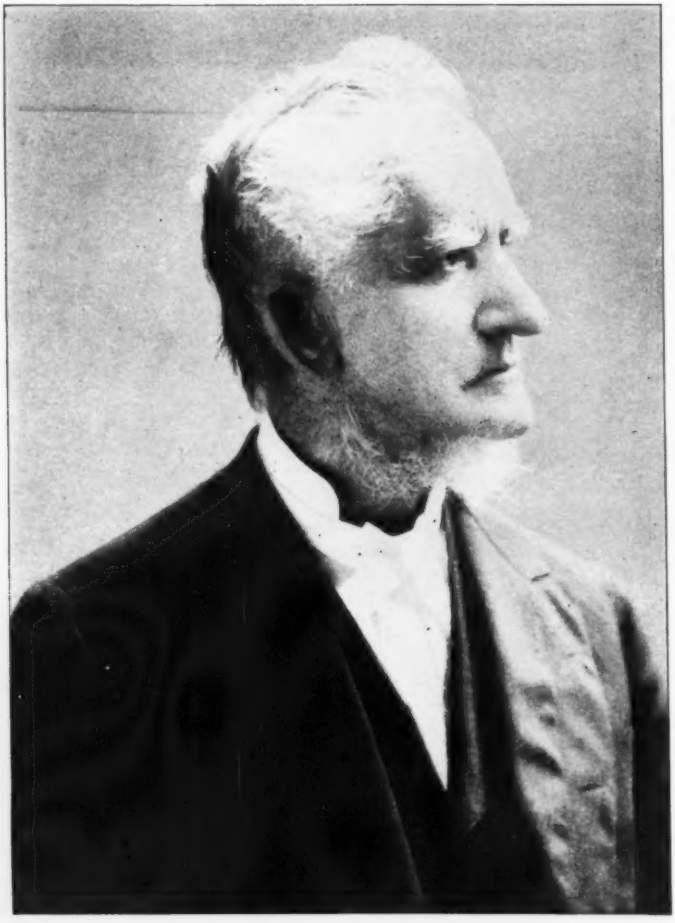

NATHAN SMITH DAVIS, M.D., A.M., LL.D.*
"Father of the American Medical Association"

*See Special Article on page 236.

CLINICAL MEDICINE AND SURGERY

GEORGE B. LAKE, M.D.
• *Editor* •

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VOLUME 44 JUNE, 1937 NUMBER 6

EDITORIAL

Birth Control Instruction Is Now Legal

AFTER maintaining a strangle-hold on the lawmakers of this socalled civilized nation for more than sixty years, the dead hand of the pruriently prudish Anthony Comstock has at last been removed from the medical profession by an enlightened judge, and physicians are now free to give certain of their patients who need it such instruction regarding control of the size of their families as is vitally necessary to their physical, spiritual and economic welfare, without taking them into a back room and pulling down all the curtains when they do it.

Under the archaic and preposterous so-called "obscenity laws" (still on the statute books, but now no longer having legal effect), physicians were forbidden to import or transport contraceptive information and devices, for the protection of the health and lives of their patients.

In 1933, a package of pessaries was sent from Japan to Dr. Hannah M. Stone, a well-known New York gynecologist, for research purposes. Under the "Comstock Law," the customs authorities refused to admit them. In January, 1936, the case was brought before Judge Grover Moscowitz, of the District Court, who rendered a decision that, since the pessaries were intended for legitimate use, they must be turned over to Dr. Stone.

The government appealed the case to the United States Circuit Court of Appeals for the Second Circuit which, on November 30, 1936, handed down an even more sweeping decision than that of Judge Moscowitz. On January 29, 1937, the Department of Justice at Washington announced that it would not appeal the case to the Supreme Court. The decision, therefore, takes its place as the law of the land. The long fight of the courageous and foresighted proponents of the rational limitation of families, most prominent among whom is Margaret Sanger, has at last been won!

An editorial in the *Journal of the American Medical Association* for April 3, 1937, gives the impression that the court decision here referred to has made no particular change in the status of contraception in this country, but the last two lines of that article appear to contradict its entire tenor. In at least forty states, physicians have been legally free to *give contraceptive advice*, but their ability to obtain necessary contraceptive information and supplies involved Federal laws, so that, when this editorial states that the court decision referred to has "nothing to do with the legality or illegality of the practice of contraception within any state, *except as that practice may involve foreign and interstate commerce or the use of the mails*" (italics are ours), it says, in effect, that the barrier which has largely been holding back the universal dissemination of contraceptive information has been removed, except in those states

which have laws forbidding the giving of such information, and at least one of these (Massachusetts) has already seen fit to liberalize its interpretation of such laws.

Since decisions of courts of last resort become, for all practical purposes, a part of the law of the land; and since the decision by the Department of Justice of the United States that it would not appeal the case to the Supreme Court renders the Circuit Court, in this case, in effect, a court of last resort (though, of course, Circuit Courts which have not passed upon this matter could legally disagree with this ruling), it would appear that the statement that contraception is now legal is true for all practical purposes, quibbling as to technicalities notwithstanding.

But this crucial victory is only the first in the campaign against ignorance, prejudice, and superstition, which must be waged by the physicians and other educators of this country, before the benefits now legally available can be brought to all the people, especially those who need them most. The one religious sect which has stood out most strongly against birth control has now sanctioned it, in principle, by approving the "rhythm" or "safe period" method, so it now remains only to decide upon the method which is simplest, safest, and best adapted to the needs of the least highly developed and intelligent people.

Physicians now can, and *must*, familiarize themselves with the splendid research work which has recently been done along these lines, and with the technics recommended by authorities, so that they can advise and instruct their patients intelligently. Clinics must be established where those who cannot afford to pay for private consultations can be given the necessary information free or at a nominal fee. Means must be devised for curbing the activities of those who would market worthless or dangerous preparations and devices. These are but a few of the battles yet to be won.

In this war against ignorance and darkness, the physicians of our land must be the commanding officers of the forces of light and progress, for it is in their hands that the Courts have placed the major responsibility. Knowing the glorious history of the medical profession, no one can doubt that its members will perform this duty with valor and distinction.

The great need today, in every phase of our social, economic and political life is *understanding*. It has always been so, but today the need is even greater.—CHARLES R. HOOK.

Competitive Charges

TO the wholly undiscriminating individual, "beef is beef," and the butcher who sells his wares at the lowest prices will capture most of the trade of such people.

There are, however, large and rapidly increasing numbers of persons who have passed that stage of development and who are able and willing to pay the price charged for a prime sirloin steak, rather than to accept an amorphous slab of bull meat at the lowest price at which it can be sold. By and large, we get about what we pay for, and the price charged for any article or service is apt to be a reasonably accurate index of its value.

The successful physician has long since ceased to purchase drugs and instruments on a competitive price basis (if he ever did so), because he realizes that his professional success (and therefore his reputation) depends upon the purity, potency, and accuracy of the drugs he dispenses or prescribes, and upon the absolute reliability of the instruments he uses.

Every clinician must appraise himself with cool and impersonal accuracy, and decide what caliber of practice he desires and is capable of handling. This is especially important for young medical men at the beginning of their practice, because it is far more difficult to raise oneself from a lower to a higher professional level, after it has once been established, than it is to start out on the highest level one is able to maintain.

If State Medicine is foisted upon us (as seems quite possible), the mass-production service which will be fostered will appeal to the undiscriminating majority on a price basis, and generally to their detriment. But there will always be thousands of people who will welcome an opportunity to purchase a higher grade of service whenever and wherever it is available.

It must be clearly remembered that, when one charges fees which are above the minimum level, one must be able and willing to deliver services which are, at least, worth all they cost. This means unremitting and sincere efforts at self-improvement, and keeping one's equipment, as well as one's skill and knowledge, up to date.

The practitioner who charges 50 cents for an office call, from $2.00 to $5.00 for a minor operation, and from $10.00 to $15.00 for attending a confinement, will generally be busy, after a fashion; but there will always

be plenty of work for the men who charge from five to ten times these fees, *if their services are worth what they charge.*

No one is in so good a position to set an accurate value upon his work as the Doctor himself. Each one must determine his own worth, and if his judgment is accurate, the public will accept and remunerate him at his own valuation.

Goodwill is the one and only asset that competition cannot undersell or destroy. —MARSHALL FIELD.

The Future of Medicine

THE medical profession has lived and functioned for many centuries, accepting (generally after a battle) the new discoveries which have been made and gradually assimilating them; changing its methods (under protest, but of its own volition and in its own way) to meet changes which have taken place in the fabric of human society.

The continuation of the story will probably be somewhat along the lines of the chapters which have already been written; but just now it appears that forces are at work which are intended to substitute arbitrary and external forces for the natural and evolutionary ones, so that the status and scope of the profession will be altered in a revolutionary manner, by politicians and other laymen. The only way to avoid this appears to be by a sincere and coordinated effort, on the part of physicians, to find some way to meet the present conditions adequately on their own initiative, instead of waiting to be *pushed* into some situation which will be disastrous for all concerned.

The two-volume report, "American Medicine," which was reviewed in the May, 1937, issue of this Journal, on page 226, furnishes the raw material for arriving at a workable plan for such reorganization of medical methods as will meet the present situation. This material, along with all other that is available (there are some thought-provoking suggestions in Dr. Davis' biographic sketch of his illustrious grandfather, in this issue), should be studied *now*, so that the formulation of a program need not be delayed any longer, because the situation is so acute as to call for *immediate* action, which can be *intelligent* action only in proportion as the individual medical men are familiar with the facts and concepts involved, and *effective* action only as they are prepared to abandon selfishness and *cooperate* wholeheartedly with their fellows in the work which needs to be done.

The future of the medical profession still rests in the hands of its members, and it remains to be seen if they are wise enough, unselfish enough, and energetic enough to assume the responsibility of saving themselves and protecting the interests of their patients and the public at large.

NEXT MONTH

Dr. Hans Hirsch, of Berlin, Germany, will present a highly interesting, illustrated account of the use of internal iontophoresis and internal iontothermy in the treatment of chronic gonorrhea and strictures.

Dr. Sheppard S. Povlin, of New York City, will discuss local physiologic rest as an aid to other methods of treatment.

Dr. J. C. Drake, of Kerman, Calif., will explain the symptoms and treatment of poisoning from the bite of the "black widow" spider.

Mr. Dickie's article on Ambroise Pare, unavoidably omitted this month, will appear.

COMING SOON

"Safety of the Oral Administration of Iodine," by Maurice Brodie, M.D., New York City.

"Immunologic Aspects of Neurasthenia," by Samuel Kahn, M.D., Atlanta, Ga.

THANKS AT EVENING

A little purple wind sighs through the flowers—
Last breathing of a sweet and fruitful day—
The while I offer thanks for busy hours,
For strength to labor and a heart to pray;
For bright, hot sunshine and quick, timely showers;
For friends and home; for autumn and for May.
Dear day, packed full of life's enduring stuff,
Night comes ere I can offer thanks enough!

G. B. L.

SPECIAL ARTICLE

●

Dr. Nathan Smith Davis

Pioneer in Medical Education and Organization

By N. S. Davis, III, A.B., M.D., F.A.C.P., Chicago, Ill.

NATHAN SMITH DAVIS, the son of Eleanor (Smith) and Dow Davis, was born in a log cabin in a clearing on a farm near Greene, Chenango County, New York, January 9, 1817. He received his degree of Doctor of Medicine from the College of Physicians and Surgeons of the Western District of New York, located at Fairfield, January 31, 1837, and died in Chicago, Illinois, June 16, 1904.

His education consisted in attendance at a district school; at Cazenovia Seminary for one year; a few months under Dr. Daniel Clark, of Smithville Flats, N. Y., as preceptor; and three courses of lectures at the College of Physicians and Surgeons of the Western District of New York, between which he studied under Dr. Thomas Jackson, of Binghamton, as preceptor.

Impressed by the inadequacy of his training, he soon became active in the movement to expand the medical curriculum, lengthen the course of lectures and grade them, and raise the standards of preliminary education and the requirements of licensure. Even so, his formal medical education was greater than that received by most of his contemporaries, who attended the course of lectures in a medical school for one or two rather than three years, if they had any instruction except from a preceptor.

After a few months as a locum tenens in Vienna, New York, he opened an office in Binghamton, July 27, 1837, and at once commenced to take an active part in the affairs of the Broome County Medical Society, in which he was an officer from 1838 until his removal to New York City, in 1847.

In 1842, he was elected a delegate to the New York State Medical Society, but did not attend a meeting until 1844. From the minutes of that meeting it appears that he had already acquired facility as a public speaker and debater, for he participated actively in its deliberations. He was in that year elected a permanent member of the Society. In 1845, he continued to take an active part in the work of the Society, especially when resolutions regarding medical education, which he and other members had submitted the year before, were discussed. At the suggestion of Dr. Alden March, of Albany, he introduced the resolution that called a national medical meeting in New York City in 1846, which adjourned to meet in Philadelphia in 1847 and became the American Medical Association. Dr. Davis was selected chairman of the Committee to carry these resolutions into effect. The meeting in 1846 was called because: "It is believed that a National Convention would be conducive to the elevation of the standard of medical education in the United States."

In 1847, Dr. Davis moved to New York City, and shortly thereafter was elected to the faculty of the College of Physicians and Surgeons, and became Editor of the *Annalist*. In 1849, he moved to Chicago, to become the first professor of pathology and physiology at Rush Medical College, which, in conformity with resolutions adopted by the American Medical Association, had added this department to its curriculum. In 1850, he was instrumental in the organization of the Chicago and the Illinois State Medical Societies, and, in order that hospital beds might be available for teaching purposes, founded the Hospital of the Great Lakes which, a few years later, became Mercy Hospital.

In 1850, he became professor of the principles and practice of medicine at Rush, and retained that position until his resignation, in 1859, to assume the same professorship in the Medical Department of Lind University. He was professor of medicine in this and its successor schools until about 1894, when he became Emeritus. He was dean of the Chicago Medical College and the Northwestern University Medical School from 1863 to 1898, and was a member of the first board of trustees of Northwestern University, in which capacity he served almost continuously until his death.

Dr. Davis was active in the organization of the Chicago Home and Aid Society, the Chicago Academy of Sciences, the Chicago Historical Society, the Illinois State Microscopical Society, and the Washingtonian Home. In addition to serving as editor of the *Annalist* (1848-49), he edited the *Chicago Medical Journal* (1855-59), the *Chicago Medical Examiner*, the *Northwestern Medical and Surgical Journal*, the *Eclectic Journal of Education and the Literary Review*, and the *American Medical Temperance Quarterly*. In 1882, he was instrumental in persuading the

American Medical Association to discontinue its annual transactions and start a weekly Journal, of which he became the first editor.

Because of his activity in connection with its founding, he was known as the "Father of the American Medical Association." However, he was not only its founder but, for its first fifty years, one of its most active and influential members. He was its president from 1863 to 1865; the first chairman of the Section of Medicine; for years a member of the Judicial Council and of many other committees; and also one of its trustees. For many years he was secretary of the Illinois State Medical Society, and also its president, and was president of the Chicago Medical Society for three terms. He was president of the International Medical Congress in Washington, in 1887.

In politics Dr. Davis was an active old-line Democrat until Bryan became the party's candidate. From then on he voted the Prohibition ticket.

In 1833 he married Anna Maria Parker, whom he had met while practicing in Vienna, New York. She survived him and died in 1908, at eighty-seven years of age. They had three children, Ellen Davis (Mrs. Francis H.) Kales; Dr. Frank Howard Davis; and Dr. Nathan S. Davis, Jr. In addition to his two sons, two grandsons—John Davis Kales and the writer of this sketch—and one great granddaughter, Elizabeth Kales (Mrs. Francis) Strauss, became physicians.

Though resolutions favoring higher entrance requirements, a longer school year, and a graded course of lectures, were adopted by State Medical Societies and the American Medical Association at many of their meetings, after 1847, few changes were made by the medical schools; so, in 1859, Dr. Davis, with other members of the Rush faculty, resigned to organize a new school where they could put into effect the changes he had been advocating for so many years. In the autumn of that year the Medical Department of Lind University, which in 1863 became the Chicago Medical College and about 1892 the Northwestern University Medical School, opened, with higher entrance requirements, a six-months course of lectures with an added optional summer term, and a two-year graded course.

But the other medical schools of the country failed to adopt the reforms advocated by the medical societies, even though special meetings of medical teachers were held in connection with the meetings of the American Medical Association in 1859 and 1860, and again in 1867 and 1868. These resulted in the organization of the Association of American Medical Colleges. Harvard, at the instigation of President Charles William Elliott, adopted such changes in 1872, and went a little further, in that the medical school became an integral part of the University, instead of a loosely affiliated institution. Gradually all schools adopted higher standards, but with the lengthening of the school year to nine months, eliminated the preceptorship.

By the time of Dr. Davis' death, all schools required graduation from high school before admission to medical study; a few even required a bachelor's degree. The course had been lengthened to four terms of nine months each. Full-time teachers in the preclinical departments were becoming the rule and the number of departments in both the preclinical and clinical years had been greatly expanded, due to the development of additional preclinical sciences, such as bacteriology and physiologic chemistry, and of the many clinical specialties. Since 1904, two years of college work has become a minimum requirement for entrance to medical school, and an interneship an almost universal requirement either for graduation or for licensure. But almost all instruction today is given by specialists in limited fields of medical science or practice; by those who are coming to know more and more about less and less; by those who particularize the disease and generalize the patient.

Is not this educational policy the real cause of the present dissatisfaction with medical service? (The educational policies of the Nineteenth Century were changed because the services of the doctors of that era were not satisfactory). Or is its cause the "high cost of medical care," so extensively featured by certain lay reformers and social workers (the listeners to the "muses of Europe"), who are subsidized by Foundations created by those who might have been classed as "Malefactors of Great Wealth"? Can the utterly impersonal, highly departmentalized charity, part-pay, and full-pay clinics they advocate as "cure-alls" solve these problems?

What would Dr. Davis have thought of this situation? Possibly he would feel that he should have compromised with Dr. Oliver Wendell Holmes and those others who opposed curtailing work under a preceptor in order to prolong the period of formal instruction. It is difficult to imagine that a man could agree with an educational policy that particularized the disease but largely neglected the patient who had the disease, if he had written, as did Dr. Davis: "An eminent English writer observes that the most important study of mankind is man. And though the saying was originally uttered in reference to the mental and moral conditions of man, rather than to his physical structure and the functions of his material frame, yet the prop-

osition loses none of its force by being applied exclusively to the latter." ("Trans. New York State Medical Society," 1841, p. 128). "The human system, when fully developed and healthy in all its parts, is a complicated and most beautiful fabric, affording to the philosophic and contemplative mind the most perfect illustration of the benevolence, wisdom and power of its great Architect. But in the same degree that the fabric is interesting and beautiful when in health, each part as it were, imparting to and receiving life from every other, acting and reacting with the utmost harmony in one continuous chain, and yet each organ performing its own specific and independent functions with a precision and uniformity unequalled by the inventions of art; so when, from any cause, the functions of one or more organs become deranged, a link in the great chain is broken; the wheels of life move with an irregular and hesitating pace; and unless the well directed efforts of nature or the skillful hand of art restores the deranged parts to their natural state, the beauty of the whole soon fades and instead of symmetry, we have deformity; instead of freshness and vigor, we behold the pallid cheek and the slow and faltering step; and instead of activity and enjoyment, we have nothing but pain, anguish and despair." ("Trans. New York State Medical Society," 1840, p. 28).

In the Phi Beta Kappa address, which he delivered at Harvard in 1837, Ralph Waldo Emerson said, "We have listened too long to the courtly muses of Europe . . . The spirit of the American freeman is already suspected to be timid, imitative, tame; . . . We will walk on our own feet; we will work with our own hands; we will speak our own mind. . . . Give me insight into today, and you may have the antique and future worlds." How timely are these words in 1937!

On March 1, 1937, in an address before the Phi Beta Kappa Society of Dartmouth College, Howard Mumford Jones, professor of English at Harvard, stated: "How long can we safely permit our students to believe that the rise of industry is all there is to American life? We have faced backward and turned to Europe in the humanities; cannot we sometimes turn westward and appraise our own accomplishments? The spirit of Emerson is likewise America. We have neglected the resources of our own spiritual life too long. I trust we shall not have to pay dearly for our neglect, in the materialism of which so many now complain, or in a narrow and extravagant nationalism, which, uncorrected by an understanding, not only of the spiritual struggle of mankind at large, but also by an understanding of the larger purposes of life in this republic, may yet obliterate the America of Emerson in the America of Ford." (*Harvard Alumni Bulletin*, March 26, 1937).

Do not these sentiments, expressed in 1837 and in 1937, while uttered in reference to the social and educational attitude of the United States as a whole, apply equally well to medical practice and education? The study of disease in man is today spoken of as medical science. It is, in reality, a mixture of the sciences of biology, chemistry, physics, bacteriology, and psychology, in so far as the diagnosis, treatment, and prevention of disease are concerned, and of the humanities, such as sociology, ethics, and economics, in so far as the rendering of this service to the individual is concerned.

One cannot help feeling that Dr. Davis, whose education and experience, with the exception of two trips to Europe in connection with preparations for the International Medical Congress in Washington in 1887, was gained during eighty-seven years of life and sixty-seven of medical practice in the United States, would subscribe to the principles expressed in the statements of Emerson and Jones. Would he not, if alive today, advocate a reform in medical education that would lead to the education of family doctors who particularize the patient, rather than of general specialists who particularize the disease? He sought to educate the physician properly, that he might, as a general practitioner and family doctor, render adequate medical service, diagnostic, therapeutic and preventive, to the individual patient. Today, with the tremendous advances that have occurred in medical knowledge, it is impossible for a general practitioner to render all medical service adequately. The family doctor should, however, continue to direct the medical services rendered to his patients, prescribing not only such drugs, serums, diet, or mode of life as may be indicated, but also the services of such specialists in diagnosis and therapy as may be required.

The most important study for the doctor of medicine is still man, a social animal. The study of the etiology, diagnosis, prevention, and treatment of disease is a part of this, as is also the study of the influence of economic and social conditions, of heredity, etc., on the conservation of health.

The most important objective of medical education is the training of men to continue such studies and to apply them, not to mankind in the abstract, but to the individual patient, in a manner most beneficial and satisfactory to him.

Can these problems not be best solved in the spirit of Emerson, in the spirit of America, without listening to the (no longer "courtly") socialisticly despotic "muses of Europe"?

700 No. Michigan Ave.

LEADING ARTICLES

The Nature of Disease

By J. E. R. McDonagh, F.R.C.S., London, Eng.

AS a result of combining clinical and laboratory work, I have inferred that disease is the half-way house between life and death. I regard life, disease, and death as closely related phenomena of activity or energy, exhibited by some of its products of condensation, which it has generated in the course of the cyclical journey it is taking. What activity is and how it arrived in the Universe are unknown and unknowable. Whence it came, thither it must of necessity return —a fact which renders all physical processes cyclical, because activity is everywhere and unalterable. When activity arrived it underwent condensation — a change which has since been progressive.

Every body in the Universe is a product of the condensation of activity. Activity pervades every mass and in the same form. It is only the behavior of activity which varies, and this is determined by the degree of condensation reached by the product concerned. "Life," "disease," and "death" are names which denote the different behavior of activity. Therefore, to get a clear picture of these three phenomena, it is necessary, in addition to showing what the differences are, to describe the changes which take place in the products responsible for them. To do this adequately some idea must be given of the products which were previously generated, because no sharp line of demarcation can be drawn between any contiguous two. Put in another way, "life," "disease" and "death" are words which have been arbitrarily fixed to phenomena exhibited by products generated in a certain part of activity's cycle. There is no beginning nor end of these phenomena and it is entirely due to the fact that man practices differentiation, instead of correlation, that they have become problems. Therefore, I propose to trace the journey activity has taken from its beginning up to the present.

When activity began to undergo condensation, an interchange of activity occurred between two masses. Activity flowed from the one to the other. The product attracting it stored it, and thus became more condensed. Progression and retrogression have proceeded side by side ever since. The changes are readily reversible, because a product giv-

ing up activity to one more condensed may attract activity from one less condensed—another fact which makes it impossible to draw a sharp line of division between two closely related products and the phenomena they exhibit.

The cycle activity is traversing can be separated into six segments. In the *first or sub-atomic segment,* products are generated which radiate and attract and store activity. Harmony may reign between the actions of attraction and storage, or disharmony may prevail. In the latter case the products disintegrate into rays, the wave-lengths of which are shorter the less condensed the mass happens to be.

As condensation advances and activity enters the *second or atomic segment* it generates products which attract and store and radiate activity. Radiation is the chief characteristic of this segment, as was attraction in the first, and it takes the form of rays, the frequency of which diminishes as the products become more condensed. Despite this radiation the products undergo disintegration in the end, liberating atoms, sub-atomic masses, and activity in the form of rays having longer wave-lengths than cosmic radiation. The disintegration of the *negatrons,* which I hold to be the generators of cosmic rays, in the first segment, and of the radio-active metals in the second, might have ended activity's career had parts of a whole not become differentiated and a union been established between the two.

A sub-atomic product became differentiated into an electron and a proton, and metals combined with non-metals to form chemical compounds, which mark the *third segment.* The chief feature of this segment is the storing of activity, the amount of which increases *pari passu* with the strength of the link uniting the atoms. When the link becomes too strong the structure of the compound becomes too rigid, and stability would have ended activity's career at this juncture had not a medium type of link, to which the name "co-ordinated co-valent" has been affixed, been selected as the one of choice. In this linkage oxygen formed the bond between the elements, and, as it was generally in combination with hydrogen in the form of water, this chemical compound came to form an integral part of the products of the condensation of activity.

When the freedom of movement between the bound products and the intervention of water led to a differentiation of each whole into shell and core, or periphery and nucleus, activity was enabled to leave the crystalline state for the colloid, or to enter the *fourth segment.* About this time the wave-lengths of the radiated rays had so increased as to travel no longer in selective paths. They circumscribed the product emanating them instead, the effect of which was to give the product a freedom of action it had never previously had. Each product grew more and more independent, with the result that all interactions between like products became displayed in the surrounding fields of activity rather than on or in the bodies themselves. This non-interference with the body was a tremendous stimulus to progress. Each product adsorbed more and more other products until the complex body was formed to which the name "protein" has been given. When this product was generated, activity may be said to have left the colloid state to enter the vegetable kingdom—the *fifth segment.*

Its passage from the fifth to the *sixth segment,* which marks the animal kingdom, is even less clearly defined. As the independence of the products grew greater and greater they became more interdependent; i. e., as the products became more condensed and more encased in activity in the form of rays of ever-diminishing frequency, the fields began to enclose several products instead of only one. The more products which became enclosed in a field, the more vulnerable the whole became and the less able was a part to repair any damage it might sustain. Almost any part of a plant may be taken, from which to produce a whole new plant; whereas a nerve cell in man cannot be regenerated. The increasing inability to replace a damaged part and the increasing growth of interdependence are the features which help most to differentiate the vegetable and animal kingdoms.

Protein, like all colloid products of condensation, attracts, stores, and radiates activity, as well as adsorbing and discharging other lesser condensed products, and so long as harmony reigns between these various processes, all is well. But disharmony must occur, because as certain protein products progress others retrogress. When protein becomes more condensed its various constituents become more firmly bound together, it adsorbs other products around it, and it takes in more water. Because of the last-named condition, I refer to the process as "*hydration.*" When protein is being robbed of activity the various constituents become less firmly bound together, several previously adsorbed constituents are liberated and pass into solution, and water flows out of the products; consequently to this process I apply the term "*dehydration.*"

"Life" is a word which can be used to denote the harmony reigning between the various protein products which are the bricks used to build up the whole body. The word "disease" is applicable when so much disharmony reigns or the balance between the radiation and attraction of activity is so upset

as to give rise to what are called "signs and symptoms," or simply "manifestations," because there is only one disease. The more closely related or the more condensed or hydrated are the interacting protein products, the less marked is the disturbance, the more difficult it becomes to separate life and disease, and a considerable time may have to elapse before the antagonism between organs grows sufficiently pronounced to be labelled "disease." I hold the gigantism of the ancient saurians to be a past example of this organic disharmony. The demise of these prehistoric lizards may readily have been brought about by the condensation of the integumentary structures out-pacing that of the other tissues and organs in the body. A present example is the development of the brain at the expense of the rest of the body, and I feel sure that, unless something else happens to end the life of man beforehand, the time will come when the imbalance between the mental and physical mechanisms will become too great for the two to be held together.

Just as the central nervous system is progressing, the ductless glands are retrogressing, and it is to the activity liberated by the protein products in the latter that the word "hormone" should be applied. These forms of "disease" I call "natural," and I regard them as heading what I term "intrinsic disease." The other type of intrinsic disease is "inherited disease," the term I apply to the disharmony engendered between the host's main resistance and his tissues and organs by the continued onslaught which has been made upon the former through the countless ages the protein products have combined to form a body.

The hydration to which the protein particles in the plasma, which constitute the animal host's first line of defence, have been subjected throughout aeons has become inherited. To the attacks which are made upon the host's main resistance during his lifetime, I apply the term "extrinsic disease," and I regard what I call "congenital disease" as forming the link between the intrinsic and extrinsic forms. The best example of congenital disease is congenital syphilis, and the reason why the causative agent of this infection is able to achieve what none of its *confrères* can do, is because the spore of the *Leucocytozoon syphilidis* is the most condensed of the infective microorganisms and most closely approaches the protein products of the host it invades.

Extrinsic disease is an expression of the battle which is waged between the invaded and the invader. The first protein products of the invaded to be subjected to dehydration are the protein particles in the plasma, and the grade of dehydration produced is determined by the degree of condensation reached by the invader. The activity liberated as the protein particles are broken up may be transformed into heat energy, when pyrexia is produced, but the process of dehydration itself gives rise to few signs and symptoms of disease.

The dehydration may be measured by the rate at which red blood corpuscles fall in a column of citrated plasma; by the fall in the refractive index of the serum; by the rise in the percentage of the various previously adsorbed constituents; and by the appearance the protein particles present when the serum is examined with a dark-ground condenser.

It is the hydration which follows the dehydration as a natural sequence, which is responsible for the manifestations of disease presented, because the hydrated protein particles rob the cells of activity belonging to the tissues and organs in which they become precipitated. The manifestation of disease produced is determined by the grade of hydration reached. For example, when the protein particles are most hydrated they become arrested in the perivascular lymphatic spaces in the central nervous system, and when least hydrated in the lungs.

The invaders can be separated into three classes and each member of the class arranged in its order of condensation. The class which contains the most condensed products is the microorganismal, then comes the chemical, and finally the physical. The *Leucocytozoon syphilidis* heads the microorganismal class and the ultramicroscopic viruses tail it. Consequently, the former subject the protein particles in the plasma to the greatest degree of hydration, whereas the latter cause the corresponding degree of dehydration. The lower the scale of the evolutionary condensation is descended, the more dehydration and the less hydration the invader causes, and at an indefinite point the action of impulse, which produces the latter chemico-physical change, is succeeded by quanta of energy, which produce the former chemico-physical change. Energy in quanta actually penetrates the protein particles, whereas the action of impulse is displayed at the interfaces between the opposing bodies.

Treatment is an invader and its aim is to cause dispersion of the hydrated protein particles, which is the equivalent of dehydration of normal protein particles. Dispersion results in the invaded being able to turn the tables on the invader, and one of the effects of this, when the invader is a microorganism, is to break up the protein particles into smaller ones, some of which may be able to pass through filters. When the hydrated protein particles are incapable of being dispersed, death is the result, and the moment this phenomenon is exhibited the particles

affected undergo disintegration, as did the negatrons and radio-active elements before them.

When protein particles undergo hydration, activity is attracted and stored in the center; the particles increase in size, because they adsorb water and the various products of condensation it holds in solution; and they become more refractile, because they generate activity within through the great development of the fat in the shell. In consequence of these changes they lose their Brownian movements, the red blood-corpuscles fall extremely slowly in a column of citrated plasma, the refractive index of the serum is raised, and the percentage of the various adsorbed constituents is lowered.

When protein products reach a certain degree of hydration they lose their connections with the neighbouring products, interdependence is replaced by independence, the cells grow aberrantly, and cancer is the manifestation of this disharmony.

The interaction between two opposing products of condensation resolves itself into a transference of activity from one to the other. The phenomenon produced depends upon the length of the waves of the rays in which form activity exists, and this is determined by the grade of condensation reached by the products concerned. This concept of "Life, Disease and Death" has been reached by the continued application of correlation, and it is described in more detail in the book I am publishing under this title.

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Birth Control: The Doctor's Duty

By Margaret Sanger, New York City

HUNDREDS of articles, thousands upon thousands of words, have been written about birth control since the term was coined in 1914. But the idea behind all the pros and cons is as simple as all truth. Birth control is the use of scientific knowledge to remove blind chance as the chief deciding factor in the birth of children and to control the birth rate by means that *prevent* conception. Scientific methods of birth control involve the use of chemical and mechanical methods of contraception.

The history of the concept of conscious control of conception goes back more than a hundred years, to the writings of Robert Malthus and James Mill, and man has attempted, from earliest antiquity, to save himself from the consequences of his own fertility. War, famine, pestilence, infanticide, abortion, and sexual customs dictating periods of enforced abstinence have, through the long centuries, acted as checks upon population and the birth rate.

A survey of the sociologic and moral roots of the birth control movement has no place in this article, for our concern is with today and tomorrow. We should remember, however, that here is no upstart, twentieth century idea, born of industrialism, modern unrest, and other factors, that it is sometimes the fashion to deplore. The human race has been conscious of this problem since earliest written history, and in all stages of civilization. The reason is not far to seek. The amount of the earth's surface capable of supporting life is strictly limited. On the other hand, Nature, to insure survival, has equipped living creatures, mankind among them, with a disproportionate physiologic capacity to increase and multiply. The result, as Professor Henry Pratt Fairchild has pointed out in his article "Population and War," is that "every species in existence periodically produces offspring at a rate which, if there were nothing to stop it, would overflow the earth in a very few generations."

The hazards of survival in the vegetable and animal kingdoms maintain the balance. With man, the same checks held population increase and means of subsistence in equilibrium well into modern times. But the magnificent achievements of medical and other sciences have dramatically changed the picture—and no one would wish to set back the clock.

The young men and women who are entering the medical profession today take their place in a noble assemblage, join the ranks of those who have succored mankind, and it is because of this very fact that the problem of conscious control of the birth rate—birth control—is peculiarly their problem and their responsibility.

I can do no better than to go to the heart of the matter by quoting the challenging statement of the late J. Whitridge Williams, M.D., beloved and revered by physicians throughout the country.

"Where should we stand as medical men?" Dr. Williams wrote, in the *Journal of the American Medical Association*, nearly nine years ago (issue of Oct. 27, 1928). "I hold that it is just as much our duty to give contraceptive advice when medically indicated as it is to advocate the employment of any other prophylactic measure . . . If we feel that such advice is necessary, we must give directions as to how it can be made effective, for if we do one without the other we are failing in our duty as physicians and in great part are wasting our time."

Is the young doctor sent out of medical

school today (to say nothing of those graduated in past years) equipped to give effective advice on contraception? Unfortunately we cannot answer with a clear affirmative. For though the medical indications for contraception are many and clear cut, a thorough grounding in contraceptive technic is not included in the curriculums of all medical schools.

In 1933, the National Committee on Maternal Health made a survey of 76 Grade A medical schools, inquiring into the teaching of contraception and sterilization. Thirty schools reported no contraceptive teaching, though some were planning for it and approved it in principle. The accompanying table shows the total number of schools teaching the subject, and the method of instruction.

	Lecture & Clinic	Lecture only	Clinic only	Unspecified	Total
Contraception	12	11	2	3	28
Sterilization	16	9	4	2	31
Not teaching Contracep. but teaching sterilization	—	—	—	—	8
Not teaching either subject	—	—	—	—	20

The survey's findings were summed up (in part) as follows: "Many of the Grade A medical schools are including both contraception and sterilization in their courses of instruction to students, but no school appears to have laid out a definite course in either subject as part of its curriculum. The subjects are taught by occasional lectures or clinical instruction or both, and usually in the senior year."

No survey has been made since 1933, but it is safe to state that, though recent graduates may be better equipped in this field of preventive medicine than their older colleagues, they themselves still feel the inadequacy of their training. Physicians and students welcome the opportunity of observing technic at birth control clinics; they write to the existing birth control organizations for not only lay, but technical data, and have been quick to see the value of the *Journal of Contraception*, a pioneering periodical for members of the medical and scientific professions.

There is, however, ample evidence of steady and increasing support of birth control and a recognition of its place in preventive medicine and public health. Organized medical groups, as well as individual physicians, have gone on record in support of the principles of birth control and the movement to wipe out legal restrictions, which latter was the major objective of the National Committee on Federal Legislation for Birth Control. Nearly one hundred medical bodies took such action, among them the American Gynecological Society; the American Neurological Association; the Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association; the Medical Women's National Association; State Medical Associations of Florida, Maine, Michigan, and Connecticut; many County Medical Societies; and the New York and Cincinnati Academies of Medicine.

Individual physicians, in their writings, in testimony at hearings on birth control bills, and in their generous service in birth control centers and on medical advisory boards of birth control organizations, have shown a keen awareness of the urgency of the birth control problem. Dr. Prentiss J. Willson, of Washington, D.C., chairman of the National Medical Committee on State and Federal Birth Control Legislation, gave testimony before a sub-committee of the U.S. Senate Judiciary Committee in 1934, which would, I think, be echoed by every thoughtful physician. As such it merits detailed quotations:

"The list of medical indications for contraception is a rather formidable one. Among chronic diseases there are heart and kidney disease, tuberculosis, syphilis, diabetes, chronic or potential chorea, several types of anemia, and exophthalmic goiter. There is a whole list of disease conditions of the female organs, which, because of the risk of abortion or extra-uterine pregnancy, indicate contraception. Nervous and mental disorders, such as epilepsy, paralysis, feeblemindedness, multiple sclerosis, and various types of psychoses and neuroses furnish additional and well-recognized indications, according to the consensus of medical opinion . . . I venture the opinion that the question of control of conception is doubtless one of the major problems affecting the married women of America. My experience teaches me that, in the absence of sane and safe methods of contraception, under the stress of the present economic situation, married couples are going to resort to some method of birth control. Many of these are harmful, either in a physical sense, because of damage done to the delicate tissues of the generative tract, or through the production of neurotic states, many of which I have had occasion to see, due to this cause. Here lies the crux of the whole argument in favor of placing birth control in the hands of the medical profession of this country."

Birth control is indicated in still another field—one which makes it (or rather *should* make it) a routine part of postnatal care. It is needed for child spacing. Medical authority holds that a period of at least two years (possibly three), should elapse between the birth of children, so that the mother can adequately recover from the drain of pregnancy and childbirth and give care, including nursing if possible, to the newborn child. In advocating a three-year interval I have often put it thus graphically for lay audiences:

One year for nursing and infant care; one year for the woman to be herself, an individual; and one year to plan for, conceive and carry the new child.

The U.S. Children's Bureau, in its studies on "Causal Factors in Infant Mortality," showed the definite relation between child spacing and infant mortality. Children born one year apart die at the rate of 146.7 per thousand—a rate which is reduced to 98.6 when the interval between births is two years, and drops to 86.5 for the three-year interval. The mother, the older children, and the infant all suffer when children come too close together. From this point of view alone, birth control is indicated for *every married woman of childbearing age.*

I have made mention several times of legal restrictions. In 1873, Congress, at the instigation of Anthony Comstock, passed laws classing "prevention of conception" with obscenity, and forbidding the importation of contraceptive information or materials or their transportation within the country by mail or common carrier. America has paid dearly for this blunder, for it has clouded and confused an issue which should have rested on medical findings; it has tied the hands of physicians, retarded research, and doomed countless women to ill health and death. The birth control movement, particularly during the past seven years, has been largely focussed upon securing legislation to exempt the physician from these restrictions, so that, as Dr. Williams stated, "he might carry out his duty as a physician."

The gradual build-up of public support, the better understanding of the real meaning of birth control and its constructive possibilities, have borne fruit, due in large part to efforts attendant upon securing the passage of a birth control bill; but the Courts, instead of the Congress, have clarified the law and handed down to the American physician his bill of rights in the field of contraception.

In a test case on the importation of contraceptive materials, sent to Dr. Hannah M. Stone from Japan for research purposes, the U.S. Circuit Court of Appeals for the Second Circuit ruled that the intention of the Comstock statute "was not to prevent the importation, sale or carriage by mail of things which might intelligently be employed by conscientious and competent physicians for the purpose of saving life or promoting the well-being of their patients." This decision marks a milestone in the birth control movement, and (I venture to say) in the history of preventive medicine. Contraceptive advice may now be given by physicians in their public as well as their private practice. Every hospital and dispensary, every Public Health Agency, every welfare organization may, and should, now include birth control in its services.

The century-long groping for sane control of births is over. The legal obstructions have been surmounted. Science has given us reliable and harmless methods of contraception, and research is developing even better and simpler methods. Freed from the taint of being classed with obscenity, birth control can now be used by the wise physician to promote a well-rounded married life for his patients. The necessity for child spacing, for family planning in accordance with health and income, all point toward the place of birth control as a necessary part of medical practice.

Whether the physician is a "family doctor" or a "specialist," he will be faced with the necessity (if he is to carry out the highest dictates of his calling) of advising his patients on this most fundamental issue.

"The three great strides of medicine are towards the control of pain in labor and operation, the control of infection in obstetrics and surgery, and the control of communicable diseases," said Dr. Robert L. Dickinson some years ago, addressing the New York Academy of Medicine. "These three advances, made in the face of opposition and indifference on the part of the organized profession, are now its common pride and glory. *A fourth control, the control of conception,* needed to safeguard life, health, and happiness, though now suspect and maligned, will take its place of honor with these others. Courage and wisdom were required to restrain the forces of disease and death. A greater courage and a higher wisdom are called for within our profession to undertake a guiding part in the control of life."

I know that the doctors of America, and particularly those young and eager newcomers who this year enter the profession, will rise to the challenge of this greater courage and higher wisdom.

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BIRTH CONTROL AS PROPHYLAXIS

For the protection of future generations from those serious nervous disorders which are as yet incurable and known to be transmissible by heredity, the control of reproduction is a measure so vital and so complicated as to defy brief analysis. It seems obvious that, until medical science has determined the cause and treatment of these diseases, prevention at the source constitutes our only method of attack.—WILLIAM H. CARY, M.D.

Low Back Pain

By Bernard D. Judovich, B.S., M.D., and William Bates, B.S., M.D., F.A.C.S., F.I.C.S.,
Philadelphia, Pa.

THE diagnosis and treatment of cases of low back pain have been, in many instances, vague and unsatisfactory. There is a beginning awareness among some of the newer investigators that the sacro-iliac joint has, with great frequency, become the haven for otherwise unexplainable symptoms. Lumbago, lumbosacral sprain, and malingering are other terms often loosely applied to low back pain.

We have attempted, in the past several years, to find an explanation for pain in the lower back, and investigations have shown that an important factor in low back pain is dorsolumbar irritation. In another article we have shown reasons why the dorsolumbar area is susceptible to injury and strain.

Quoting from previous articles [1, 2, and 3] the following *anatomic and mechanical considerations* of the dorsolumbar spine establish its greater susceptibility to sprain than any other spinal region:

1.—The thoracic and pelvic curves are primary, developing before birth, forming part of the walls of the thorax and pelvis, and are due chiefly to the shape of the vertebral bodies. The lumbar curve, however, is secondary, developing after birth, and depends mainly on the shape of the intervertebral discs. Under these circumstances it is natural to expect greater mobility.[4]

2.—Areas of the spine where fixed and movable portions join each other are the areas most subject to strain, fracture, dislocation, etc. This applies more to the dorsolumbar region than to any other part of the spine below the cervical region. The segments above and below the dorsolumbar region are comparatively fixed.[5]

3.—The vertebrae at the dorsolumbar region bear almost as much weight as the lumbar spine, and yet they are smaller and weaker.[4]

4.—In this region the transverse processes are short, while the longer ones below, together with the crest of the ilium and the ribs above, give a powerful leverage to the muscles that move the dorsolumbar region.[4]

5.—The nearness of the dorsolumbar area to the middle of the spine enables a greater length of leverage to be brought to bear against it than any other part of the spine.[4]

6.—The dorsolumbar segment bears the weight of the body superstructure at angles more variable than any other part of the spine, often with the addition of lifting load.

7.—The lumbar enlargement of the spinal cord in this region makes the vertebral housing relatively smaller.

8.—If, in addition, we consider the further predisposing causes of scoliosis, lordosis, and off-balance lifting, twisting, and bending, the picture of dorsolumbar sprain becomes less difficult to comprehend.

Clinical Considerations

1.—The fact that the majority of spinal fractures occur in the dorsolumbar region.

2.—The nerve distribution in a large series of cases shows dorsolumbar involvement in the majority.

3.—Nerve block in this region is followed by relief of pain and disappearance of tenderness.

In looking over articles on low back pain and monographs on backache, we find little or no mention of this condition, which we now have assumed to be quite prevalent and amenable to treatment.

The cases to which we shall mainly refer are those of low back pain without radiation along the true course of the sciatic nerve. The pain in these cases may be limited to the lower back or, as is found occasionally, there may be some radiation to any point above the fourth lumbar nerve.

Many clinicians are aware of the fact that, in a significant number of cases of socalled sacro-iliac disease, the x-ray examination shows no evidence of pathosis. Moreover, up to about thirty-five years of age the x-rays show very little deviation from the normal, while from forty years upward—the period of life when bony changes are found normally—arthritic changes are frequently discovered. In these cases we are prone to make a diagnosis of sacro-iliac arthritis, and accept it as the basis of the patient's complaint. Many patients have inadvertently discovered that they have a fairly well marked arthritis of the lumbar spine and sacro-iliac joints, while being studied for some condition not related to pain in the back.

In cases where, admittedly, the patient has pain in the region of the sacro-iliac and lumbosacral regions, or lower lumbar region, we very frequently are focusing our attention upon an area of pain which is carried down from the dorsolumbar region by way of the iliac branches of the 12th dorsal and 1st lumbar nerves.

Dorsolumbar Irritation

In order to grasp the picture seen in dorsolumbar irritation, one must be thoroughly familiar with the distribution of the nerves involved, and an active effort must be made to map out the tender areas. In a previous article,[2] we described this distribution thus:

"Pain and tenderness is as follows: Pos-

teriorly, an area over the gluteal region, limited above by the crest of the ilium, below by the intertrochanteric line, mesially by the sacro-iliac line, and laterally by the posterior margin of the great trochanter; anteriorly, parietal tenderness over McBurney's point over an area parallel to Poupart's ligament; a small area one finger-breadth wide, parallel to and below Poupart's ligament; and by a triangular area high up on the inner aspect of the thigh; last, definite tenderness will be found over the first lumbar nerve trunk, paravertebrally. Pressure at a point about two inches from the midspinous line and immediately below the last rib on the affected side will elicit this tenderness. This distribution is found in nearly all cases, except for occasional minor deviations which affect the size of the area involved and not the distribution in itself. It is well to apply equal pressure to a corresponding area on the unaffected side. This will serve as the control area."

This entire syndrome is covered by the 12th dorsal and 1st lumbar nerves, only occasionally involving the 10th and 11th dorsal and 2nd and 3rd lumbar nerves. In all cases of true sacro-iliac disease associated with pain in the leg, we have found the distribution in those nerves whose trunks are in areas close to the sacro-iliac joint—the 4th and 5th lumbar and 1st and 2nd sacral nerves, the majority of cases involving the 5th lumbar and 1st sacral nerves. However, even with this distribution and other of the standard clinical tests for sacro-iliac diseases, we hesitate to make such a diagnosis until we have performed a diagnostic block, paravertebrally, of the 12th dorsal and 1st lumbar nerves. We have seen a number of cases of this type in which pain ceases completely following the blocking of these nerves, proving that, in these particular instances, the pain was merely carried down from above.

These cases usually give a history of backache, with pain in the leg developing several weeks or months later. We feel that this may be due to a primary protective spasm of the paraspinal muscles initiated by the dorsolumbar irritation, the spasm later causing irritation of the nerve trunks lower down. In these particular cases the tenderness previously described is present in the distribution of the 12th dorsal and 1st lumbar nerves, but may or may not be present in areas below (4th and 5th lumbar and 1st and 2nd sacral), even though pain is present.

In dorsolumbar irritation, pain may be complained of at any point within the entire distribution of the 12th dorsal and 1st lumbar nerves. This paper, however, is concerned with backache and we shall not go into the various clinical aspects which involve the anterior distribution.

Diagnosis

In order to make a correct diagnosis, we must accept certain facts which have presented themselves in this condition:

1.—*Painful areas are necessarily tender,* either in the skin and fat layer (obtained by pinching or pin prick), or involving the branches supplying the muscular area. This latter type shows no skin and fat tenderness. Pinching, pin pricking, or use of the cotton wisp is valueless; finger poking must be used.

2.—*All tender areas are not necessarily painful,* but should be present throughout the entire distribution and should be anatomically correct. The patient may not be aware of these tender areas until they are elicited and checked with normal control areas. Spontaneous pain may exist at any one or more points within the tender distribution. These points of spontaneous pain are not necessarily more tender than contiguous areas of tenderness that have not become painful.

Studies made thus far indicate that, in the type of pain involving the skin and fat, there is a definite reduction of skin surface temperature, as shown by a thermocouple. These cases show a distinct rise of temperature following diagnostic block with Novocain (one case showed a rise of 7° F.). The reflex vasoconstriction apparently is not present in the muscle-tender group, but only in the skin-tender group.

Menell,[7] in his monograph on backache, makes the following statement:

"There is a curious fact connected with sensitive deposits which are formed in the tissues, and which, for lack of a better name, are generally referred to as 'fibrositic deposits.' It is unusual for patients to be able to explain the exact position of these deposits from the symptoms of which they complain. Very often the pain which is felt by the patient is located at a spot far removed from the actual site of the deposit. This particularly applies to sensitive deposits in the gluteal region.

"The usual site attributed to these deposits is just below the crest of the ilium. Experience has shown, however, that this is not the most common place to find them. Such deposits, formed on the gluteal aspect of the posterior superior spine, may be the cause of a most inveterate backache, and frequently cause referred pain down the leg, even extending to the heel.

"The next most common position in which they are found is about two finger-breadths below the crest, deep down in the gluteal muscles, and probably in the aponeurosis of the gluteus medius, close to the superior gluteal ridge on the dorsum of the ilium. A painful deposit in this region may cause referred pain up or down, or both, thus giving rise to symptoms of backache, or to a

pseudosciatica. Sensitiveness to deep pressure on the internal aspect of the posterior superior spine, over the posterior aspect of the ligaments between the ilium and sacrum, is probably in the ligaments of the sacro-iliac joint, and not the result of a fibrositic deposit.

"Another very common situation for fibrositic infiltration is in the neighborhood of the angle formed by the outer border of the erector spinae and the lower border of the twelfth rib. An acutely sensitive deposit in this position seems, for some reason, to present symptoms all its own and easy of recognition."

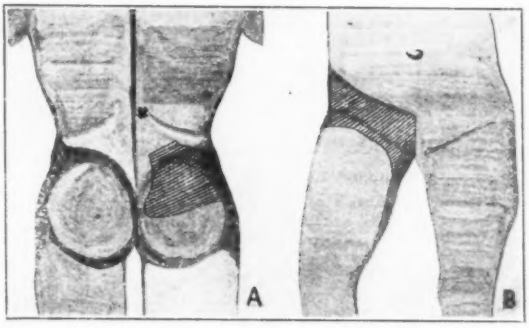

Fig 1:—Areas of tenderness in dorsolumbar irritation.

In the above quotation from Menell, the fact that pain may occur at a point some distance away from the sensitive deposits should make us suspicious that perhaps the deposits are not the cause of the pain. All of the various sites mentioned by Menell fall within the distribution of the 12th dorsal and 1st lumbar nerves, even including the point at which the nerves emerge at the costovertebral angle.

In making a diagnosis of dorsolumbar pain, the tenderness must be present both anteriorly and posteriorly, as illustrated in Fig. 1. Do not confuse tenderness with pain. The pain may be anywhere within the distribution of the nerves, but the tenderness should be present in the entire distribution.

After having made a diagnosis of dorsolumbar irritation, the next procedure is to do a paravertebral block of the 12th dorsal and 1st lumbar nerves. If this is done correctly, the entire area of pain and tenderness, both anteriorly and posteriorly, will completely disappear in from five to ten minutes. Occasionally, this condition may overlap a true sacro-iliac disease, lumbosacral condition, or other similar pathosis. In such a case, all of the gluteal pain and tenderness will disappear, and tenderness and pain will stand out sharply along the sacro-iliac line, or other coexisting conditions will remain, aiding greatly in making a diagnosis.

As a predisposing factor, we have found, in the great majority of cases, lordosis, scoliosis, or spinal arthritis. It is very common to find a shortening of one lower extremity, which produces a tilt of the lumbar spine with compensatory scoliosis, its degree governed by the amount of shortening. In our experience these patients do not make a permanent recovery unless they wear a heel raise which corrects the scoliosis. In these cases it may often be noted that the scoliosis is evident in the standing position, and is improved or absent in the sitting position. Acute upper respiratory infections, focal infections, or trauma, in combination with any of the previously mentioned mechanical defects, are, in our experience, the most common causes of parietal pain in this region.

Not all cases of backache are due to dorsolumbar irritation, and sacro-iliac or lumbosacral conditions do occur. However, we feel that the picture here presented occurs with such great frequency, corroborated by nerve distribution plus cessation of pain following nerve block, that it is of very definite importance. Furthermore, a number of these cases were previously diagnosed and treated as sacro-iliac and lumbosacral conditions by competent orthopedists, with unsatisfactory results. We know of no lesion of the low back, in the region of the sacro-iliac joint and its surrounding areas, which would cause tenderness of the anterior abdominal wall.

Treatment

The treatment of dorsolumbar pain may be outlined as follows:

1.—Relief of acute pain by
  A.—Nerve block
  B.—Physical therapy
  C.—Rest
2.—Corrective Procedures
  A.—Removal of infection
  B.—Postural correction by
    a.—Heel raise
    b.—Exercises
  C.—Mechanical support, if necessary

Technic of Injection

The patient lies prone with a pillow under the abdomen, the shoulder on the affected side raised in order to bring the last rib into greater prominence as a landmark. The spinous processes of the first and second lumbar vertebrae are located; a line is drawn at right angles to the long axis of the spine at a point overlying the upper edge of the above-named spinous processes; 3 cm. laterally, on the line extending from the

level of the first lumbar spinous process, a wheal is raised with Novocain. This is repeated on the line extending from the second lumbar spinous process, except that the distance is 4 cm., because the first lumbar transverse process is about 1 cm. or more shorter than the second process.

A three-inch, 21-gage needle is passed directly downward. If the landmarks are correct, the needle point should impinge on the transverse process of the vertebra being approached. The depth of this point is measured; the needle is partially withdrawn and reinserted upward, at an angle of 45°, and inward, at 20° to 25°, to a depth 1.5 to 2 cm. greater than the depth obtained to the posterior aspect of the transverse process.

Withdraw the plunger of the syringe to make sure that the needle point is not in a blood vessel nor in the subdural space. After these precautions are observed the solution to be used is injected: (1) Novocain, 2 percent; (2) Sarapin, as furnished commercially; (3) Novocain and Sarapin, equal parts; (4) dilute alcohol, 1:5 in 2 percent Novocain solution for thoracic nerves, and 1:2 for lumbar nerves.

The nature of the fluid injected and the frequency with which it is applied depend upon the etiologic factors involved and the clinical progress of the patient. Usually the Novocain and Sarapin will yield satisfactory results.

The injections of Novocain and Sarapin are usually given two or three times a week, using 5 cc. for thoracic nerves and 5 to 10 cc. for lumbar nerves. When improvement is noted the frequency is reduced to once or twice a week. Alcohol is given once a week, using an average of 2 cc., for not more than two or three injections.

The various types of physical therapy should not be applied lower down, in the region of the tender areas, but above, at the dorsolumbar spine.

When acute symptoms have subsided corrective procedures are instituted. These include: removal of infection, focal or otherwise; postural correction and exercises, if necessary; a heel raise for those cases having a shortened lower extremity; mechanical support where it is needed.

Summary

1.—Pain originating in the dorsolumbar region constitutes one of the most common types of backache, its pain being referred through the iliac region and lateral to it.

2.—Such pain is often incorrectly diagnosed as sacro-iliac or lumbosacral sprain, lumbago, or malingering.

3.—There is a definite area of tenderness which is diagnostic of dorsolumbar irritation and which includes the distribution of the 12th dorsal and 1st lumbar nerves.

4.—In dorsolumbar irritation there are definite mechanical, anatomic, and clinical reasons for the frequency of its occurrence.

5.—Treatment should be focused at the dorsolumbar region, and not at the usual painful areas below, of which the patients complain.

6.—The most efficient therapy is paravertebral nerve block, which affords rapid relief of pain, proves the diagnosis by eliminating other coexisting conditions which it may overlap, and greatly reduces the period of disability.

7.—The diagnostic outline of the area of tenderness, plus the results obtained by nerve block and the use of the thermocouple, is very useful in ruling out suspected malingerers.

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DANGER TO THE BANKS

We have made the banking system solvent, but today we are loading up the banks of this country with bonds at prices that are extremely and abnormally high, and if there should be a return of interest rates, not all the way to the level that prevailed in the 1920's, but even half way, I think that, for half of the banks in this country, a large part of their capital, surplus and undivided profits would be wiped out; and if we should return the whole way to the level of interest rates that prevailed up until about 1930, the Federal Deposit Insurance Corporation itself would be insolvent.
—Dr. Lionel D. Edie, *in* The Watch Dog, *Jan., 1937.*

Diagnostic Mistakes

Failure to Think

By Ralph Gorrell, M.D., D.N.B., Clarion, Ia.

WE generally fail to diagnose a case, either because we fail to think of the disease or fail to look for it. Failures in physical examination have been discussed in another paper.[1]

As diagnostic fields broaden and disease entities become more and more differentiated, it becomes increasingly difficult to carry a complete list of differential diagnoses in one's head, or even to have it available in handy form. Because medical and surgical treatment is becoming more specific, it is increasingly important to make definite, accurate diagnoses, so that the patient may have the benefit of early, helpful treatment.

I shall cite a few examples of failure to think, to analyze all data in proper perspective, to reject incongruous findings, especially those of the laboratory. In this connection, Kilduffe's blunt statement is of special interest: "There are no pathognomonic laboratory tests. . . . The fact that certain reactions occur rather consistently in a certain disease does not render them diagnostic *per se*, and even more fallacious is the conclusion that, because they are absent, the disease is also absent. . . . There is no such thing as a diagnostic Widal reaction." Gordon mentions the occurrence of a trace of albumin and a few casts, in passive congestion of the kidney following heart decompensation, which are often diagnosed as signs of nephritis.

Case 1.—Clendening[2] calls attention to the error of accepting someone else's word for an essential part of the examination:

A child began to have high fever in the course of otitis media. A mastoidectomy was planned for, but was not performed after the otolaryngologist looked at a urine specimen and found it to contain pus. The hospital laboratory had returned negative reports on four previous specimens. Clendening did not mention whether the error was due to mislabeling, use of the "sink test," or to blockage of the ureter, so that pus could not be found for several days. In these days of dependence on the other fellow for much of our diagnostic work, it is disturbing to realize the chances for error.

Intestinal Perforations

Case 2.—A lack of analysis of the previous history is illustrated by this case:

A man, aged 44, had a perforated duodenal ulcer, which was sutured in eight hours. After a delayed, painful, septic convalescence, he recovered and was dismissed. Five weeks following the operation, he returned to the surgeon complaining of pain on urination, frequency, and dysuria. Because of the localization of distress to the bladder, he was referred to a urologist, who made the diagnosis on the history, confirmed it by a rectal examination, and returned him to the surgeon for drainage of a *pelvic abscess*, secondary to the peritonitis following the perforation.

Case 3.—A patient was examined rectally (digitally and proctoscopically) by five physicians at the New York Postgraduate Hospital. Six hours later, he suffered severe, agonizing pain in the abdomen. A high enema was ordered by the house officer, without consideration of the possible causes for this pain. Two quarts of solution were given, and *did not return*. Still this did not give rise to alarm. The liquid was found free in the abdomen on exploratory laparotomy, the following afternoon (Heyd[3]).

In this connection, Crohn and Rosenak's report[4], on 58 cases in which the sigmoid was perforated, is of interest. Men who would not think of doing a cystoscopy, blithely push in a ten-inch sigmoidoscope.

These perforations occurred as a result of sigmoidoscopy and the following procedures, such as fulgurating polyps. In many of the cases, the bowel was diseased. Crohn perforated two apparently normal sigmoids, without the patient experiencing any pain at the time. One was recognized by seeing the glistening, peritoneal coat of the small intestine. The other left the office without complaint, only to have the typical, sudden, severe, abdominal pain come on later. Other physicians have recognized perforations by viewing the peristalsis of the small intestine and the appendices epiploicae of the colon. Bleeding is not usually observed. A flat x-ray plate of the abdomen will always reveal free air under the diaphragm. The mortality is 100 percent after seven hours.

Kantor[5] suggests that, to find the lumen ahead of the instrument, one soak cotton-tipped applicators in 25-percent magnesium sulphate solution, then push them gently ahead of the instrument, or allow them to sink in and thus find their own way. Many proctologists believe that air inflation of the colon is dangerous (Buie[6]).

Pain

Ward has found cases of anginoid attacks due to intercostal neuralgia, secondary to focal infection in the teeth and tonsils. This brings up the question of considering a pain as being serious or diagnostic by its location alone. Pain in the skin and muscle can occur just as well over McBurney's point as over the left upper quadrant; but in the former case, the patient is in danger of being

considered a surgical prospect for his "chronic appendicitis." Bates relates a number of cases presenting pain and tenderness in the right lower quadrant, with recurrence of exactly the same pain after appendectomy, whereupon "adhesions" were diagnosed but not found at reoperation.

Superficial tenderness can be ruled out by having the patient tense the abdominal muscles (as by lifting the extended legs), and then straining, or trying to blow the nose with the mouth shut and the nose held shut with the fingers; then palpating for tenderness. If the tenderness persists, it is evident that it is in the abdominal wall, as the underlying organs cannot be palpated through the tightened muscles. If the tenderness disappears, the pathosis is probably internal. If Novocain (procaine) is infiltrated into the tender area, superficial tenderness will disappear, but examination will bring out the deep pain.

Superficial pain, whether located in the abdomen, chest, or elsewhere, may be due to recent infections, especially respiratory, and to orthopedic conditions; e.g., one leg being longer than the other, scoliosis, etc.

Davis[7] has found that, in 250 cases of pain in children, which were diagnosed as acute and chronic appendicitis, ureteral stone, pleurisy, gallstones, arthritis, synovitis, and bursitis, none developed evidence of organic disease, despite prolonged observation over months and years. All these cases followed upper respiratory infections; all were relieved by counterirritants and mild analgesics. Brenneman has also commented on the frequency with which abdominal pains follow acute upper respiratory infections, especially sore throats. At times, the diagnosis is important in children, as appendicitis often follows throat infections. Here is a personal case:

Case 4.—A girl, age 8, had bronchitis for 4 days, when persistent abdominal pain centered around the unbilicus for twenty-four hours, with definite tenderness above McBurney's point, which was much lessened when the abdominal muscles were tensed.

Spinal anesthesia was not given, because of the possibility of localizing the infection in the spinal canal by the needle, as has recently been reemphasized by Robson[8]. ("Do not give spinal anesthesia to a patient showing abdominal symptoms of a possible appendicitis, where early pneumonia is also suspected, nor to a patient showing abdominal symptoms, when an acute infection of the throat is also present. Both may have a bacteremia and the injury caused by the needle puncture may focus the infection in the spinal canal.")

The lower abdominal nerves were blocked regionally, at the lateral abdominal wall, and an acutely inflamed appendix was removed. In this case, *both* neuralgia and appendicitis were present.

The physician and patient who depend on pain as a guide to the course of appendicitis may be misled by perforation, with its deceptive cessation of pain, and by complete gangrene, in which the pain suddenly stops. John B. Murphy's[9] points on appendicular gangrene are: (1) Nerves to the appendix are dead, so no pain can result; (2) a dead appendix ceases to absorb toxin, so the pulse and temperature fall to normal; (3) adhesions can be formed only between living surfaces, so a dead appendix will not form adhesions and therefore there is great danger of septic peritonitis. Several cases are reported in which the surgeon insisted on operating *because the pain stopped*, and found, in each case, a gangrenous or ruptured appendix.

While an intern, I missed a diagnosis of appendicitis because I failed to think of it:

Case 5.—A lawyer, aged 72, had a severe, nonspecific, acute dysentery, with frequent cramping pains. On the third day he began to complain of generalized abdominal pains, worse than those previously present, but of the same type. Morphine was ordered (it was a busy day) and the patient was not examined for several hours. Rigidity, grade three-plus, was then found. A consultant diagnosed a ruptured or perforated viscus. Immediately laparotomy disclosed a perforated, suppurating appendix. Thanks to a large catheter sutured into the site of the appendix, he got along very well. This making of a temporary cecostomy is often lifesaving, and always prevents severe gas pains and distension.

Harbin[10], in reviewing pre- and postoperative diagnoses in 500 laparotomies, finds that many errors were due to failure to exclude: (1) neuroses; (2) visceroptosis; (3) perineal relaxation; and (4) malnutrition.

Neurotic Patients

The neurotics, like the poor, are always with us. It is annoying to have them talk for hours about their unusual symptoms, queer sensations, and family troubles; but before sending them off without satisfaction, to themselves or to you, remember:

1.—There may be some definite organic disease which begins insidiously, without definite signs or symptoms, such as pernicious anemia, Addison's disease, carcinoma, diabetes, tuberculosis, syphilis, ectopic pregnancy, chronic secondary anemia, hypovitaminosis, etc.

2.—Not all diseases have been classified. Perhaps the symptoms present are those of an unrecognized disorder. What of the weakness, vertigo, hunger, even convulsions, of the hypoglycemic? Some authorities now believe that there are as many cases of this overfunctioning of the pancreas, as of underfunctioning (diabetes), yet how were these patients diagnosed twenty years ago?

Narcolepsy has been known since 1870,

when Gelineau[11] first described it, yet it is described in few textbooks or even large reference sets, despite its glaring objective signs: A personal case will illustrate it.

Case 6.—A woman of 36, a farmer's wife, had consulted eight physicians, during the past ten years, because of attacks of sleep. She would drop off to sleep three or four times daily, even when she had slept ten or twelve hours during the night. Her general health had been perfect. Diagnoses suggested were hypothyroidism (although thyroid extract did not help at all), anemia, neurosis, focal infection from a tonsillar tag, and hysteria.

Not due to any brilliance on my part, but because I had been fortunate enough to be associated with several well-read neurologists while on the staff at Northwestern University Medical School, I recognized it as narcolepsy. When she began to take ephedrine (four ⅜ grain capsules a day) her relief was complete. Since that time, Benzedrine sulphate has been substituted, because of the smaller dosage and better tolerance.

"The average physician sees a great number of psychoneurotic patients in his office, and it has been estimated that 80 percent of all patients suffer, in one form or other, from psychoneurotic symptoms. Definite cardiac disease, peptic ulcer, etc., have marked aggravations of their symptoms; dyspnea becomes more marked, tachycardia more evident, and even symptoms of decompensation more acute when the patient is under emotional stress" (Kraines[12]).

"It is unfortunate that doctors deliberately drive nervous patients away from their offices . . . the *average general practitioner could double his practice* within three years[13], if he would but grasp the idea that psychiatry is compounded of such ingredients as his own medical experience, common sense, modern psychology, and some ability to understand and judge human nature . . . they should realize that what these nervous patients really want is sympathy, attention, an audience. If the physician is willing to make sympathetic contact with such patients, they will show themselves willing to follow his advice, and to start out more or less enthusiastically on the long, long road to Wellville . . . you must become a good listener." (Murphy used to say, "Listen to the patient; he will tell you the diagnosis.")

The patient with two, three, and even four laparotomy scars will not be helped by another operation. To this general rule, there is only a very occasional exception. Quoting Alvarez[14]: "Avoid operating on people who have already been to the operating table several times without relief. The probability is that, at the start, the cause of their symptoms was not in the abdomen; it may not be there even now, but if it is, the chances are that all the king's horses and all the king's men could not put that peritoneum and intestine back again into a comfortable state."

Case 7.—An exception to this dictum follows:

A woman of 36 years had been subjected to three laparotomies, with appendectomy, cholecystectomy and finally freeing of adhesions, as the successive operative procedures. In each case, the severe right-sided pain recurred very shortly, even before leaving the hospital. A retrograde pyelogram demonstrated ureteral block and moderate-sized hydronephrosis on the right side. Nephrectomy gave permanent relief.

Visceroptosis, of which so much has been written and so little known actually, seems to be a clinical will-o'-the-wisp. Some individuals exhibit a stomach ptosed into the pelvis, without signs or symptoms of impaired function. Others show a right kidney which can be pushed up and down for three or four inches, yet pyelograms reveal no ureteral block or stasis, and there is no definite distress. Somewhat illogically, in this group may be placed those women with moderate or marked uterine retroversion, without dysmenorrhea, sterility, or lower abdominal distress.

Instead of thinking of the individual organ, there seems to be a growing tendency to consider the whole group of abdominal viscera, as the ptosis is frequently generalized. Graves has emphasized that, in gynecologic replacement, close approximation of the recti must be obtained. DaCosta[15] states: "Whatever operation is done, the diastasis of the rectus muscles must be corrected by approximation and suture." It would seem logical to thus strengthen the abdominal wall after every abdominal operation, especially after cesarean section, and on multiparae or the obese. Possibly the relief obtained by ptosis operations is due to the tight approximation of the abdominal walls, as well, of course, as to the rest and consequent relief of downward pull. If so, this result could be obtained by a relatively simple operation, without invading the peritoneal cavity or keeping the patient off her feet for long.

Failure to think cost a medical student the sight of one eye.

Case 8.—While attending a home confinement, the bag of waters ruptured suddenly and some of the amniotic fluid entered the student's eyes. He consulted an opthalmologist, after conjunctivitis had appeared The specialist ordered argyrol, without examining the secretion from the eye. Finally, the true diagnosis of gonococcic conjunctivitis and keratitis became only too apparent; day and night treatment could save only one eye.

Fluid in a body cavity does not always mean inflammation: In a University clinic, a few years ago, I was shown a case that demonstrates the harm a lack of complete differential diagnosis may do:

A woman of 45 had had her right chest aspirated eight times; the fluid was always

sterile, watery, and had specific gravity of 1.009, so it was considered a transudate. After four weeks of negative examinations, it was accidentally discovered that she had been on a vegetarian diet for many months. Her serum proteins were found to be low. Since giving a high-protein diet, the fluid has not reaccumulated.

Roentgenograms are not pathognomonic: In a case of suspected subphrenic abscess, roentgenograms disclosed an elevated right hemidiaphragm. Operation was advised and performed, without anything being found in the liver or under the diaphragm.

In regard to that difficult diagnosis, Waterhouse[16] says: "If within two weeks to two months after a septic lesion in the abdomen, notably a perforated ulcer, ruptured appendix or gallbladder, the patient develops continuous fever, a fast pulse, and malaise, suspect subphrenic abscess. Pleural effusion resulting from pleurisy, empyema, or infarct is sudden in onset, while subphrenic abscess takes days and is painless at first. There may be a sterile pleural effusion secondary to subphrenic abscess, however."

Mistaken Diagnoses of Apoplexy

Case 9.—A man of 50 years was admitted to hospital in coma. His previous health had been good; he had been drinking heavily of late. Numbness and cramps in the left arm had appeared, followed by thickness of speech, numbness of the left leg, and finally coma. With a blood pressure of 180/110, in a stocky man presenting conjugate deviation of the eyes and an ironing out of the left side of the face, cerebral hemorrhage would seem a likely diagnosis.

Twenty-four hours later, however, he was perfectly conscious, his pupils were still unequal and rigid, and his paralysis had disappeared. General paresis was suggested and was confirmed by positive spinal fluid and blood Wassermann tests.

Case 10.—A woman of 47 years was admitted to hospital unconscious; her previous health had been perfect. Numbness had developed in her left arm and leg, followed by a jumpy feeling in the limbs of her left side, with eventual paralysis and unconsciousness. Examination revealed twitching of the left side of the face, and the left arm and leg; blood pressure, 120/80.

The following morning she was conscious and complained only of numbness of the left side. The deep reflexes of the left side were decreased, and there was a suggestion of a left Babinski sign. Her eye-grounds were normal.

Cerebral accident being deemed improbable, paresis or cerebral neoplasm was suggested. A blood Wassermann reaction was negative. A roentgenogram of the skull showed a golf-ball-size shadow to the right of the median line, near the rolandic area. The tumor was removed, and there was no hemorrhage in it, but over it a sharply localized area of fresh meningitis, thus accounting for the acute symptoms. (It has been stated in recent literature that 40 percent of brain tumors can be indicated or definitely diagnosed on a flat plate.)

Case 11.—A man, aged 69, with a long history of moderate hypertension (usually about 178/100), was suddenly stricken with complete paralysis of the right side of his body and face. Within twelve hours, the paralysis had disappeared.

This was a case of what is called "cerebral vasospasm." The symptoms of cerebral hemorrhage are duplicated, except that they clear up rather promptly, usually leaving no residuals, after a few hours or a day. In one case mentioned in the literature, the patient had three such attacks within thiry-six hours.

Winkelman[17] believes that temporary paralysis represents apoplexy. "Textbooks on this subject usually dismiss this topic with the terse statement that angiospasm had occurred, and its relief occasioned a clearing up of the clinical picture. When it is realized that this condition rarely occurs except when a high degree of arteriosclerosis exists, it is questionable whether or not angiospasm is the correct interpretation. Were the condition more common in young people, the explanation would at least be more plausible." Osler[18] includes transient paralyses as a symptom of cerebral arteriosclerosis: "With high blood pressure and sclerotic vessels, attacks of aphasia, monoplegia and hemiplegia occur . . . transient, leave no permanent damage, and recur." Chronic alcoholics and patients with heart block may have apoplectic attacks.

Cerebral hemorrhage in the younger age groups may result from hemorrhage into a brain cyst (Deadman[19]). Several years ago I saw a man of 25 years who was hospitalized following apoplectic symptoms. All signs had disappeared in 15 hours. The blood Wassermann reaction was four plus.

"Riding a hobby"; i.e., suspecting some disease that one has just diagnosed or read about, is mentioned frequently in articles on diagnostic errors. To a greater or less extent, this is true with all of us. The appearance of an article in the literature is always followed by an outburst of new diagnostic terms, as witness the stenographer of 25, who was sent in with the probable diagnosis of hypoglycemia because of weakness and tiredness, which came on three or four hours after meals and was relieved by food. On analysis, it was found that water relieved her just as much, and the real issue was a change of environment for a few minutes, from a monotonous task.

Snap-diagnosis permits the mind to jump to a quick conclusion, often more dogmatic than logical, and blinding it to other possibilities. It has these illegitimate relations: the "telephone diagnosis," "afterhours" or

"curbstone" diagnosis. Time is a better diagnostician than any of us.[2]

Too great a belief in the relationship between age and the incidence of certain diseases is a fertile cause for error. Carcinoma frequently occurs before the age of forty; and conversely, persons over forty often have disease other than cancer. Dyspepsia in an overweight multipara does not always signify cholecystitis, but may be an early symptom of one of the anemias, cardiac decompensation, peptic ulcer, carcinoma of the rectum or colon, or disturbed gastric acidity. Analysis of a group of cases, all presenting dyspnea and all over 45, tentatively under suspicion of chronic myocarditis, revealed the following conditions: Carcinoma of a bronchus; emphysema; bronchiectasis; mediastinal tumor; leukemia; aortic aneurysm; and Hodgkin's disease[20].

Loosely classifying a group of symptoms under one prominent symptom will often prevent a complete diagnosis and effective treatment. Epilepsy, for example, is a dumping ground on which convulsions resulting from such diverse causes as brain tumor and hypocalcemia of infants, are thrown in with the "idiopathic" group. The present-day trend of thought is to find an organic basis for epileptic attacks, Dandy believing that there is such a cause in all cases. Fay and his coworkers have had some success by using cerebral dehydration in epilepsy. Relief, if not cure, can be offered in many cases, as in this one:

Case 12.—W. W., age 19, male, truck-driver, began to have attacks of sudden loss of consciousness, associated with grimacing, tongue-biting, and occasional clonic movements. He was seen in several attacks. At no time was there an aura, sphincter relaxation, or tonic spasm. The attack would last for a few minutes, then consciousness would rapidly return, although he might remain a little sleepy. There was no previous history of illness or trauma. Bromides and phenobarbital did not relieve the attacks. A neurologist confirmed the diagnosis of idiopathic epilepsy, and again prescribed bromides.

The youth became suspicious and sullen, and struck at his parents. On suspicion of a frontal lobe tumor, he was referred to a neurosurgeon, who carried out encephalography, but could find no abnormality.

He had dramatic relief from this withdrawal of cerebrospinal fluid, having only one slight attack in the next nine months, as contrasted with his previous record of one daily.

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FINISH IT!

If you start a thing, finish it! The real job is not what you are working on, but what it is doing to you. *You start it with a gush of interest—you miss your meals for it—then suddenly it goes stale, and you quit. Or you find that your plan was wrong, and you quit. And all that you have as profit from your effort is the knowledge of* how to quit! *"Well," you say, "the thing wdsn't worth the effort." Quite probably, but* you are, *and that's the whole point. Quitting makes a dead end of any road, often just as it was ready to open. Finish it! It is always too soon to quit.*—W. J. CAMERON, *over Columbia Broadcasting System.*

A FRESH START

In any new relationship, we feel an unconscious need to create, as it were, a new picture, a new edition of ourselves to present to the fresh person who claims our interest; for them we, in a strange sense, wish to, and do, start life anew.—ANN BRIDGE *in "Illyrian Spring."*

PHYSICAL AND OFFICE THERAPY AND RADIOLOGY

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FOR OFFICE THERAPY

RUSSELL A. WINTERS, M.D.

The Fever Therapy Conference

THE treatment of disease by raising the temperature of the body is not new as an *idea*, though its practical application, as real "fever therapy," dates back only twenty years, to Wagner von Jauregg's first experiment in inoculating paretic patients with malaria (in 1917), and the modern practice of *pyretotherapy*—raising the body temperature by the mechanical application of external heat or by an electrical current—is less than ten years old.

It is recorded that Hippocrates bewailed the fact that he could not produce fever as easily as he could treat it, suggesting that he probably had a fairly clear conception of increased body temperature as a healing process. In 1876, Dr. Rozenblum, of Odessa, Russia, noticed that syphilitic patients who contracted typhus or malaria and recovered, frequently appeared to have recovered from their syphilis also. He made a few inoculations with recurrent fevers and recorded his observations, but never published them.

About 1890, d'Arsonval did some experimenting with some of the earlier high-frequency machines, and produced "fever." But the quacks took up the idea before the medical profession got around to look into it, and spoiled it for reputable physicians for a generation.

The literature on pyretotherapy is now so voluminous (a number of excellent articles have appeared in this Journal), that a discussion of the developments, since Dr. W. R. Whitney's researches, in 1929, would be superfluous. The importance of this method of treatment is indicated by the First International Conference on Fever Therapy, which was held in New York City on March 29, 30, and 31 (as announced in our March issue, on page 126), and turned out to be a notable gathering, attended by more than 200 pyretotherapists, from 29 countries, and with a program of more than 50 papers and demonstrations.

The French Government took this occasion to confer membership in the Legion of Honor upon four of the American pioneers in this work: Dr. Willis R. Whitney, who invented the radiotherm; Dr. Charles F. Kettering, who conceived the idea of the hypertherm; Dr. Walter M. Simpson, who assisted in designing the hypertherm and has done much of the basic clinical work with it; and Dr. William Bierman, an early pyretotherapy enthusiast, who organized the Conference.

The papers read at the Conference reported the results of a notable amount of basic scientific research, which will be of permanent value in the development of this line of work, as well as many interesting clinical observations in a rather wide variety of diseases.

These discussions pretty well established the fact that pyretotherapy is practically a specific in the treatment of gonorrhea, and (especially if combined with arsenicals) the

most hopeful present resource in the management of paresis, and perhaps also in early syphilis, as well as possessing definite, but not yet fully worked out possibilities in the treatment of certain types of arthritis, neuritis, eye diseases, psychoses, and several other conditions.

The principal subject of controversy was the *modus operandi* by which pyretotherapy produces the results upon which all or most of the workers are agreed. Some essayists espoused the theory that the heat caused a lethal, or at least an attenuating, direct effect on the causative bacteria (this is probably true in connection with gonococci), while others maintained that the good results are due to the general increase in the leukocytes and phagocytes which takes place, and probably also to the stimulation of other mechanisms of immunity and body resistance, and to changes in body chemistry and metabolism. Future studies will clear up matters like these.

In a general way, this Conference was an historic event, confirming the fact that pyretotherapy (or "fever therapy") is a part of our therapeutic armamentarium which is no longer a fad, but a scientific resource which has come to stay, though there is still ample room for its development.

Up-to-date physicians who have not yet familiarized themselves with the methods and possibilities along this line must do so at once, so that, even if they do not expect to administer these treatments themselves, they will know when to refer patients to those who can give them. We have published a number of practical papers along these lines in these pages, and several more are now awaiting publication and should be watched for.

G. B. L.

Pasteurizing the Blood

(Pyretotherapy with Conductive Heat)

By Max S. Rohde, B.Sc., M.D., F.A.C.S., New York City

MUCH has been said and written, of late, regarding the remarkable results obtained by the application of "fever therapy" or hyperpyrexia. Many physicians seem to regard these two terms as synonymous. They are by no means so. True fever, generated within the body by the action of pathogenic microorganisms or their toxic products, or by chemical means, is quite different, in many respects, from mere high temperature, induced by mechanical, hydro or electrical measures applied from without.

The literature regarding true fever therapy —as by inoculation with malarial parasites, the intravenous injection of typhoid vaccine, and similar procedures—is so extensive that its mere mention will be quite sufficient in this connection.

The idea behind the induction of hyperpyrexia (body temperatures exceeding 102° F.) by electric-light cabinets, the Kettering Hypertherm, the Inductotherm, water baths, and other such measures, seems to have been that it would thus be possible to accomplish something resembling the famous *therapia sterilizans magna*, by actually killing the pathogenic organisms present in the body by the heat produced. This idea has been abandoned, except in gonococcus infections, but the fact remained that such treatment did produce astonishingly gratifying results in certain types of cases.

There are, however, definite disadvantages connected with both fever therapy and artificial hyperpyrexia. In the former method, the introduction of pathogenic microorganisms, toxins, or toxic chemicals into the body is not without certain more or less incalculable factors of danger; and in the latter the high and long-sustained temperatures produced result in serious discomfort, requiring sedatives for its amelioration, and untoward reactions, from dehydration. Both are highly specialized therapeutic measures, requiring hospitalization of the patient and a large amount of attention by the physician in charge and by technically proficient assistants. It has, indeed, been said that a hyperpyrexia treatment is, in all respects, equivalent to a major operation.

Nothing which has been or is to be said here is to be interpreted as in any way disparaging the work that has been done with fever therapy and hyperpyrexia. The professional and technical skill which has been shown in these clinical and laboratory researches, and the truly scientific spirit in which they have been reported, deserve nothing but the highest admiration. Moreover, the results which have been obtained in many difficult and unpromising cases have been remarkable.

It remains true, however, that relatively few physicians are professionally and mech-

anically equipped, and have available the necessary technical assistants, to carry out this work in a thoroughly satisfactory manner. It is equally true that relatively few of the patients who might be benefited by heat treatments can afford the time and money which must, of necessity, be spent for the types of services mentioned.

It should, then, be of general interest to all active clinicians to know that it is now possible to administer pyretotherapy, which appears to be in some respects just as effective as that attained by the production of artificial fever or hyperpyrexia. This method which, so far, has been found to be entirely safe in practically all cases, can be applied by any reasonably well-trained general practitioner in his office. It also does not require the patient to lose any time from his work nor to spend extravagant sums. The apparatus for administering this treatment is relatively simple, and inexpensive, and the heavy costs of hospitalization and special care are eliminated. I refer to what is known as Plasmatic Therapy (referring to the changes produced in the blood plasma), or pyretotherapy by means of conductive heat.

Plasmatic Therapy

It is well known that the application to infected fluids of a relatively low degree of carefully controlled heat for a relatively brief period (as in the process of pasteurization) will suffice to kill or inhibit all of the ordinary pathogenic microorganisms, though it will not produce complete sterility. On this basis the method to be discussed has been, somewhat fancifully, called "pasteurizing the blood." However, it is fully recognized that the analogy is by no means a strict one and that the processes involved are by no means simple and are not, as yet, fully understood.

We do know that heating of the body tissues and fluids causes a marked increase in the number and phagocytic activity of the leukocytes and in the production of antibodies. It increases the permeability of the tissues, reduces the viscosity of the blood, and lowers the systolic pressure. Heating the body tissues also speeds up and probably alters the chemical changes involved in metabolism. This is largely a result of the increase in the volume and rapidity of the circulation of the blood and lymph.

The importance of increasing the rate and volume of blood and lymph flow has been insufficiently appreciated. It is, however, fairly well known that the absorption of oxygen and the elimination of carbon dioxide (intracellular oxidation) is favored, and the secretion of various glands and the activity of ferments are stimulated by this means. J. E. R. McDonagh, in "The Nature of Disease," says: "Many of the symptoms accompanying organic disease of the brain and spinal cord are not due to destructive processes in the nerve tissue itself, but are accessory phenomena due to nutritional disorders that have arisen in consequence of irritation, of inhibition, or of *circulatory disorders*"*; while Alexis Carrel declares: "Our conduct and the character of our thoughts depend, in large measure, on the state of our circulatory apparatus."

It would, therefore, appear that an apparatus which will introduce heat into the circulating blood without altering the balance of temperature that is normally maintained by the healthy body, and that will accelerate and control the pulse rate to within five beats per minute, should, in theory at least, be effective in relieving many of the disease conditions which are widely prevalent. As a matter of fact, Plasmatic Therapy has actually brought about such relief in hundreds of cases of arthritis of various types, acute and chronic infections, hypertension, circulatory disorders, uremia, paresis, Wassermann-fast syphilis, various neuroses and psychoses, and a number of other conditions.

Patients undergoing Plasmatic Therapy treatment need not, in most cases, be hospitalized at any time. The treatments last, as a rule, only from 30 to 45 minutes. The temperature is rarely raised more than two degrees (generally less). The patient can leave the office at once, if necessary, though it is preferable to let him cool off for from fifteen to thirty minutes, if practicable, before going out. Infants and aged and infirm patients have repeatedly been treated with impunity and success. Treatments can be given daily without danger or discomfort. The moderate price of the apparatus, the shortness of the sessions, and the absence of necessity for excessive skilled attendance, permit the administration of these treatments to those with very modest incomes.

In basic outline, the plasmatic therapy treatment consists of surrounding the patient with two special, long, narrow, heating units, each of which extends from the axilla, under the sole of the foot, and up the inside of the leg and thigh to the groin, where the two are connected. He is then enveloped in a sheet, a blanket or two, and a special rubber blanket. None of these coverings is wrapped so tightly as to constrict any part of the body enough to cause discomfort. The current, coming through an ingeniously constructed adjusting, timing, and regulating cabinet, is then turned on, and will be automatically turned off at the end of a predetermined period—from 30 to 60 minutes or more, as desired. Meantime the patient's pulse and temperature may be taken and recorded about every 10 minutes. Sweat should be wiped from the face as it collects, and water

*Italics are mine.—M. S. R.

given through a drinking tube, as and if desired by the patient. This very simple attention, which requires no special technical training, is all that is necessary unless definite discomfort should develop, in which case the attendant immediately shuts off the current and calls the attending physician.

At the end of the treatment, the patient is given a quick, tepid shower or tub bath and rubbed dry briskly with a bath towel. It is sometimes advisable to follow this with a light alcohol rub and, if restroom facilities are available, the patient is kept quiet for from 15 to 30 minutes. If not, he can, if he is an ambulant patient, safely dress, after his alcohol rub, and go about his business.

The principle of the method is that the blood vessels in the skin surfaces adjacent to the heating units promptly dilate and the warmed blood begins to circulate more rapidly. As the treatment proceeds, all the blood in the body is repeatedly subjected to this gentle heating action (analogous, in a number of ways, to pasteurization) and its temperature, as well as that of all the other body fluids and tissues, is gradually raised one or two degrees above the normal, but not more. When the wrappings are removed, no part of the skin surface shows evidence of hyperemia.

The simplest and most direct method of presenting the results of Plasmatic Therapy is to offer brief reports of a few typical cases, out of the hundreds which I have treated by this method.

Case Reports

Case 1.—Male, age 28 years, suffering from **gonorrheal arthritis.**

Past History: About two years ago the patient had a urethral discharge for one month, with pain and swelling in the left ankle for about 5 days. He was discharged, by a urologist, as cured. A year later the discharge reappeared, but the doctor said it was not specific, and it cleared up in a few weeks. Two years after the original infection (10 days before admission to the hospital), pain and edema developed in the left ankle and blood appeared in the urine.

Previous Treatment: The patient was admitted to the hospital, with both ankles and both knees swollen and painful, April 2, 1935, and treatment was given, consisting of urethral irrigations; the use of a "baking cradle" to the ankles; prostatic massage; diathermy to the posterior urethra and prostate, by rectum; gonococcus vaccine; and 9 intravenous injections of typhoid vaccine. He became worse, and the right knee was aspirated May 13, 1935.

Plasmatic Therapy was begun on May 13, at which time both of the patient's knees were edematous and so painful that he could not move his feet or lower limbs. His blood Wassermann test was negative, and his urine contained blood, shreds, and gonococci.

Within one hour of the first daily treatment all pain was gone; after the second treatment he could move his legs; after six treatments he could walk without assistance; and after ten treatments he was discharged from the hospital, apparently having made a complete recovery. A few months later a letter from him expressed keen satisfaction with the results of the treatment.

Case 2.—A man of 67 years, an active, high-grade executive, who had been under the continuous observation and care of competent physicians throughout his business life, came under observation because of **hyperpiesis** with serious symptoms.

Examination showed: Blood pressure, 284/140; urine, normal except for a slight amount of albumin; Wassermann reaction, negative; blood chemistry and cytologic findings, normal for a man of his age; cystoscopy disclosed a slight median prostatic bar.

Plasmatic Therapy was begun on August 25, 1935, and after the first treatment his blood pressure was 240/110; after the second treatment, 220/100; after the third, 204/98; after the fifth, 184/94; and after the sixth treatment the pressure was reduced to 175/90 and the patient returned to his home, greatly improved. In a letter received a month later, he stated that the improvement had been maintained.

Case 3.—A man of 57 years came under observation because of **multiple neuritis.**

History: The trouble began three years previously, with severe transient pain in the right arm and left foot. Then the muscles of the right arm began to swell and, a year later, to show signs of atrophy. The pain became continuously more severe, until he was wholly unable to work. During this period, under the care of a competent and well-known physician, he received a course of diathermy treatments, and for six months was given treatments with a short-wave apparatus and with the galvanic current, but became steadily worse.

When the patient first came under my observation he was doubled up with pain; the right arm was noticeably atrophied and showed wrist-drop; and pain was present in both arms and in the lumbar region. His blood pressure was 180/104.

Plasmatic Therapy was started on July 6, 1935, and after a treatment lasting one hour the pain was almost entirely relieved, so that the patient walked without distress. After the second treatment, given after two days, the pain was entirely relieved and the patient slept the entire night, for the first time in years. The third treatment was given a week later, and after it the patient stated that he felt better than he had felt for five years and was going back to work. His blood pressure was then 150/90.

This report appears highly improbable, but I can testify to its accuracy.

Case 4.—The patient was a girl of 12 years, who had had an acute attack of **poliomyelitis** 4½ years previously, when she was in a hospital during the epidemic. Ten days after the acute symptoms subsided she returned home, with flaccid paralysis in both legs.

Previous Treatment: This girl was treated for two years in orthopedic hospitals in New York and New Jersey, but in spite of this

the right leg atrophied until it was two inches smaller than the left, and there was complete right foot-drop. A surgeon advised operation on the right foot.

She came to the Gotham Hospital wearing an iron brace to compensate for the complete right foot-drop. Her pulse was 140 and irregular; mouth temperature, 101.4° F.

Plasmatic Therapy was started on July 7, 1935, and after the second treatment her pulse was 90 and her temperature 98.8° F. After the fourth treatment the brace was removed and her foot taped. The foot-drop had nearly disappeared. After ten treatments she was able to wear ordinary shoes, and the circumference of the right leg had increased to within one inch of that of the left. After twenty treatments the two legs were nearly the same size and the patient was able to dance and ride a bicycle. Her walking gait was nearly normal.

This case was investigated by representatives of the Press, and reported in the metropolitan newspapers.

Case 5.—The patient, aged 65 years, was admitted to the hospital with complete **left hemiplegia** (probably due to cerebral hemorrhage) and a speech defect similar to that in pseudo-bulbar palsy. Had an emotional outburst of crying and laughing. The blood pressure was 198/110, and a spinal puncture produced fluid which was clear and transparent.

Plasmatic Therapy was started on August 2, 1935. After the first treatment the blood pressure was 146/100; after the fourth treatment the patient could sit up in bed and the speech was much improved; after the sixth treatment (Aug. 12) could walk normally; seemed to be well except for some clumsiness of the fingers of the left hand; showed a blood pressure of 135/90; and was discharged.

Case 6.—A man of 45 years had been treated in hospital for three months, for the relief of **Buerger's disease,** and was discharged without improvement.

When readmitted his condition was worse than at the time of his previous discharge. His feet were cold and there was no perceptible circulation; he could not stand or walk even a few feet without pain; and the pain in his legs and feet was continuous. His blood Wassermann reaction was negative; temperature, 97° F.; pulse, 64; respirations 20.

Plasmatic Therapy was started on June 19, 1935, and the patient reported relief after the first treatment. After the fourth treatment there was no pain in the legs when at rest, and the feet began to show signs of returning circulation. The improvement was more marked after each treatment, and after the fourteenth (July 6, 1935) he was discharged, having made a complete symptomatic recovery.

Case 7.—A man of 30 years had his first gonorrheal infection at 15, was treated by a urologist, and the discharge disappeared after four weeks. Seven years later the prostate began to give trouble and he went to a urologist who, for eight years, treated him, in succession, by prostatic massage, irrigations, injections of gonococcus vaccine, diathermy, sitz baths, etc. His case of **chronic gonorrheal prostatitis** showed occasional periods of improvement, but the general tendency was for the worse.

When I first saw him he was unable to work, walked with great pain, and was very much discouraged. His blood Wassermann reaction was negative and his urine showed long, bloody shreds, pus, and gonococci.

Plasmastic Therapy was started on May 5, 1933, and the patient was in such a condition that he had to stay in the hospital for the first few days. The first treatment gave him some relief, and after the second treatment he had no more pain. After the fifth treatment the urine was clear. After twelve treatments he was able to walk without difficulty, had gained 15 pounds in weight, and his urethral smear was negative—he appeared to be completely well. A year later he was seen running up a flight of steps, and stated that he felt entirely well for the first time since his youth.

Case 8.—The patient was a robust fireman of 42 years, 6 feet 1 inch tall, and weighing 220 pounds.

His first attack of **sciatica** developed two years previously and the pain was intermittent for eighteen months, after which it became practically continuous. For six months he had been unable to walk. He had been treated by diathermy and the short-wave current, and a physician had prescribed a supporting belt, but his condition grew worse, so that he was taking morphine three times a day to relieve his pain

The patient was carried into the hospital on a stretcher, wearing a pigskin belt 18 inches wide and ⅛ inch thick. He was in such pain that he was unable to turn in bed.

Plasmatic Therapy was started on December 6, 1934, and the first treatment relieved his pain greatly. After the second treatment, given the next day, he discarded his belt and walked without pain. After the fourth treatment he appeared to have recovered completely and went back to work.

Case 9.—A young woman fell while playing tennis and suffered a **sacroiliac sprain.** Roentgenograms were negative. She was treated for a year by various physicians, during which time she received a course of diathermy treatments, but at the end of the year was unable to move about freely and could not get out of bed or a bath tub without assistance

After this patient had received four *Plasmatic Therapy* treatments she could get out of bed and bath without help; after ten treatments she could walk normally; after fifteen treatments there was only a small tender spot in the center of her back; and after twenty treatments she had fully recovered and resumed all her normal activities.

Case 10.—This patient had a case of **syphilis** which, on June 25, 1935, showed, in the blood, a Wassermann reaction, with plain alcohol antigen, of 2 plus; with cholesterinized antigen, 3 plus; Kahn precipitation test (quantitative), 1.5 units. The spinal fluid Wassermann test was negative.

Plasmatic Therapy treatments were started

on June 22, 1935, and between then and August 16 he received 28 treatments.

The results of Wassermann tests, from time to time, were as follows, recorded as with the cholesterinized antigen, as being more sensitive: July 1, 3 plus; July 10, 2 plus; July 17, 2 plus; July 31, 1 plus; on August 14, the test was negative with both antigens, and the Kahn test was also negative.

Comments

I have always been an advocate of heat therapy, and during the past twenty years, on the Urological Service at Bellevue Hospital and in my private practice, I have used a wide variety of methods for applying this therapeutic agency. In my present opinion, the Plasmatic Therapy apparatus, which directly heats the blood, if used accurately and intelligently, is superior to the others.

By this method I have obtained what I consider remarkable results in cases of all types of articular rheumatism, endarteritis obliterans, general septicemia, surgical shock, uremia, arteriosclerosis, pelvic infections, pleurisy, prostatitis, sciatica, pneumonia, hemiplegia, syphilis (including Wassermann-fast cases), and a variety of other conditions.

In most cases of syphilis (including the Wassermann-fast cases), but not all, we have been able to produce a negative serologic picture by the use of this apparatus, either combined with chemotherapy or without that therapeutic assistance.

This apparatus, which raises the body temperature only one or two degrees, and therefore can only stimulate immune reactions, seems to have as great curative value as others which produce hyperpyrexia, in an apparent attempt to attain temperatures which will be lethal to the infecting microorganisms. It is, therefore, a question in my mind whether the stimulation of the immune reactions is not also the principal benefit derived from the various machines which produce very long-sustained and very high temperatures.

30 East 76th St.

NOTES AND ABSTRACTS

Injection Treatment of Hernia (A Criticism)

IN the four-part article by Dr. A. W. Dowson on "Injection Treatment of Hernia," in relation to industrial insurance and so forth, the part referring to the insurance feature is very good. (See "C. M. & S.," Feb. to May, 1937).

The part referring to the anatomy of hernia is copied verbatim from a textbook on this subject, and nothing new is developed, from that standpoint, that might prove of interest.

When the doctor gets to the various technics for the injection treatment, it is *something terrible*. We should hate to have any of our friends in the animal kingdom, much less human beings, treated by such a technic.

When Dr. Dowson recommends to invaginate the scrotum up to the internal ring, it is not only ridiculous, but is dangerous and wholly unnecessary. Not only that, but any humane doctor who has real regard for his patient will agree that it is unwise to invaginate the scrotum *at all*, even at the external ring, much less poking the finger up the canal, and even up to the internal ring.

AN INTERESTED READER.

Reply by Dr. Dowson

The criticism of my four-part article "The Injection Treatment of Hernia" is warranted and timely. I thank the critic for his constructive remarks. I should have been more specific in my statements.

The anatomic structures palpated upon digital examination of a hernia, and commonly referred to as the internal inguinal ring are, in reality, the internal oblique muscle fibers at the external opening of that portion of the inguinal canal passing through the internal oblique muscle. Seldom does the examining fingertip pass beyond the thickness of this muscular barrier up to the plane of the parietal peritoneum. It is this muscular ring that is palpated during the treatment of the internal aperture in the injection method of treating hernia.

In the typical case of hernia in which there are indications for the injection treatment or surgical repair, the internal inguinal ring, canal, and external inguinal ring have been opened and dilated by the descending mass. Therefore the danger of producing a traumatic hernia by invaginating the scrotum and *gently* introducing the finger through the external ring and canal, up to the internal aperture, is practically eliminated.

Invagination of the scrotum and introduction of the finger through normal rings and canal is no more recommended than the injection of or surgical operation upon a normal structure.

Invagination of the scrotum and *gentle* introduction of the finger through the ring and canal of a hernia patient enables the operator to locate and direct the course of the needle to the site of the injection of the proliferant; and also the recognition of the location and

relationship of the anatomic structures. The cord is under the finger, the tip of which serves as a plug to retain the viscera within the abdominal cavity, thereby protecting them against injury during treatment.

The advantages of this procedure so greatly surpass the disadvantages, when compared with the "Working in the Dark," "Thrust and Trust," "Hope and Poke" methods, which have been most objectionable to the physician, that this practice could be hailed as a safety factor in the treatment of hernia by the injection method.

A. W. D.

Editorial Comment

One of the chief purposes in publishing these comments is to correct a misconception, which seems to be rather commonly present in the minds of those who are unfamiliar with the injection treatment of hernia, regarding the manipulations which are carried out in this procedure.

Dr. Dowson has answered the important part of this criticism in a tolerant and kindly spirit, put so directly and pointedly that the maneuver in question has been made abundantly clear.

Since no important discovery regarding the anatomy of the inguinal region has been made for many years, it is inevitable that any review of that subject will be expressed in terms which have been used before. There are, however, few physicians who are so intimately familiar with anatomic details that they can not profit by checking the landmarks from time to time.—EDITOR.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Diathermy in Pneumonia

I HAVE treated 939 cases of pneumonia with diathermy, with a mortality of 12 percent (the average is from 30 to 40 percent—ED.). Only 4 deaths occurred in cases treated in the first 48 hours. Many of the patients were poor and were treated at home; and the cases were of more than average severity.

I use large electrodes and apply from 1,800 to 2,800 milliamperes of current for from 30 to 40 minutes every three hours, in severe cases.

Relief of pain, deeper respirations, improved color, a slower and steadier pulse, greater ease of expectoration, and a tendency to sleep have been noted. In about 97 percent of cases, the fever falls by lysis, instead of the customary 65 percent by crisis, seen in cases treated by other methods.—H. E. STEWART, M.D., in *Arch. Phys. Ther.*, Feb., 1936.

Electro-Cautery for Female Sterilization

STERILIZING a woman has, heretofore, required a major operation, but now an electro-cautery is available which can be introduced into the uterus, under local or intravenous anesthesia, and the fallopian tubes cauterized at the tubo-uterine junction, thus sealing them and preventing the entrance of spermatozoa and the descent of an ovum.—DR. T. F. REUTHER, in *A. J. of Surg.*, Vol. 29, p. 321, 1935, through *Journ. of Contraception*, Jan., 1936.

Use our reader service department "Send for This Literature."

BOOKS

Krusen: Light Therapy

LIGHT THERAPY. *By Frank Hammond Krusen, M.D., Associate Professor of Physical Medicine, The Mayo Foundation, University of Minnesota; Head of the Section on Physical Therapy, The Mayo Clinic. Forty-two Illustrations. Second Edition. Revised and Enlarged. New York: Paul B. Hoeber, Inc. (Medical Book Dept. of Harper & Bros.) 1937. Price, $3.50.*

The first edition of Dr. Krusen's excellent book on light therapy, issued in 1933, was received so favorably that a second edition has been called for.

The author is candid in saying that there is still a good deal to be learned concerning the physiologic action of various light wave lengths and the modes of such action. However, there is actual knowledge that certain known rays will produce very beneficial results in several diseases.

Twelve of the twenty chapters making up the book are devoted to light treatment of regional diseases to which it is considered suitable. The other chapters deal with modes of application, technic and other general matters.

One gets the impression on reading the book that the author endeavors not to be empirical in his discussions of the effects of light therapy; nevertheless, like all those dealing with a specialty, his enthusiasm occasionally rather suggests a specific action on diseases, in the therapeutics of which light therapy can only be considered as an adjunct. There can, however, be no doubt that, in a large number of pathologic conditions, the action of light is of very distinct value. Physicians will find these conditions well discussed. The book should prove of very great value to physical therapists. There is a good bibliography and an excellently arranged, ample index.

A LIVING FOR THE DOCTOR

(The Business of Medicine and the Art of Living)

The Physician and Pharmacist As a Team

By Frank B. Kirby, D.P., M.D., North Chicago, Ill.

IN the following presentation you are sharing the observations of years in a practical plan for cooperation with your pharmacist. This is a personal matter which you can adopt overnight, whether you have been a long time in practice or have recently begun. It may take a change of heart. If so, this is the one difficulty, but it is easily overcome and forgotten once you and your pharmacist actually cooperate for mutual benefits. Some one must start it, so let it be you, the physician, as your advantage will be greater. These ideas are a bit easier to put over if you are just breaking into practice, but will prove an index of your moral biceps if you have practiced for some years.

"Is cooperation desirable?" belongs in the column of foolish questions. It will pay you to cooperate in anything profitable, and the better it is, the more dividends you will realize.

Your good reputation is of direct value in proportion to the number of people who know it. A radio broadcast in the Sahara would give you mileage and coverage, but with no potential value. You must tell *your* world, or better, have someone do it for you.

More accident and emergency patients are taken to a drug store than to the doctor's office next door. Patients and their friends generally think of the drug store first. They actually *see* the means of relief—whole shelves full. Even a blind man can sense a drug store by smell. Not so a doctor's office. In this way your pharmacist and his clerks are the first source of information about the sick, the injured, and expectancies—obstetrics, as well as colds and hay fever. Therefore the very first law of self-preservation suggests that you at least get acquainted with him and his clerks. Do not discount the clerks. First make their acquaintance and then earn their friendship. They need not be put in your social register, but certainly should rate with your business friends.

To make this cooperation promptly effective, first remove the mote from your own eye, to transpose Dr. Luke. Give your pharmacist no cause for criticism. Of course, never for a moment let him or anyone else run your business, but get his viewpoint and weigh it carefully in making the decision by which you intend to stand.

Generally the pharmacist objects to dispensing by the physician as the physician properly objects to counter-prescribing by the pharmacist. There are no "arguments on both sides," but there are facts, and these should be known, evaluated, and respected. Do not ask me to tell you what to do, except on the basis of what has been done. Both parties to this friendly arrangement or agreement have their own standards of professional ethics, which should be respected.

One fact is that your pharmacist is your best and biggest asset when it comes to names and addresses. Cultivate his friendship and encourage it, as you would cultivate the flowers in your garden.

Having solved your particular problem in the matter of dispensing, you can remonstrate with him regarding his counter-prescribing.

Not one of the 65,000 pharmacists in the country objects (nor dare he) to your office equipment of anything medicinal for office practice, such as ampules, ointments, adhesive plaster, bandages, nasal sprays, hypodermics, or local anesthetics. This very fact can be made an asset to you, if you buy from him. Selling is his business, and generally you can depend upon him to treat you right, as regards both prices and service (deliveries); in fact, he frequently sells to his physicians "at list," which actually means a twenty-eight-percent loss to him.

Take the case of a hay fever patient or a syphilitic. Occasionally the physician orders, for his own office use, a box of ampules of ragweed pollen protein or neoarsphenamine. His pharmacist sends the bill when it is due, long before the patient has paid for it. It would be far better to write prescriptions for these products and let the pharmacist do the collecting. Neither disease is acute nor an emergency, therefore the patient has ample time to secure the money and pay for the necessary remedy. Why jeopardize your credit or bank balance by buying medicine for your patients and then waiting their time for payment?

Remember that medical economics does not

mean sharp practice, bargain purchases, or one-cent-sale products. It does mean sound business principles employed in a professional calling. The suggestion I have just made is one of these principles.

This is your second move, and having done this you have begun cooperation in earnest. Meanwhile your pharmacist has his eyes open and notes the facts, which will make it easy for you to demand something politely, by the laws of suggestion and reciprocity, a little later, when you are ready to develop your campaign.

The standing joke of the physician's handwriting on prescription blanks is sometimes serious, and comparisons with a Chinese laundry check are not infrequent. There is a safety element in careful writing, and moreover it is a subject of pleasing, favorable, and repeated comment behind many a prescription counter, when it is practiced.

If there is one thing that irritates a pharmacist, it is to have a physician quote "guess prices" for the prescriptions he writes. If your patient asks such a question, dodge the answer if you can, or telephone to your pharmacist. Very likely, if you make a motion toward the telephone, your patient will withdraw his question.

Also it will help your plan if you notify your pharmacist that you have just been detailed on a certain product and you wish he would stock it, as you intend to prescribe it. Many a time that will save grief to yourself, your patient, and your pharmacist, if your prescription calls for a new or rare product and it happens that the wholesaler has closed his place of business from Saturday noon to 9:00 A.M. on Monday, or over a holiday.

These trade friendships must be *cultivated* if they are to lead to real cooperation. These ideas do not complete the work of "the party of the first part." They are simply suggestive, but highly important.

Having done your part in the beginning, without necessarily saying a word to him, you are in a position to object to whatever you *do* object to in your pharmacist. He will have to "take it," and usually will be glad to do so. Do not *look* for objectionables, but having found them, tell him your views.

It still remains demonstrable that you build a friendship, not by doing something for your pharmacist, but by inducing him to do something for you. Would a directory of local practical and graduate nurses help you at times? Ask him to secure such a list, post it, and keep it accurate and active. Anything less than accuracy will not do. He, in turn, will demand immediate information from the nurses as to when they quit a case and are free for appointments. Any infraction of the rule should eliminate them from this directory service. You want information on which you can depend.

Call on him. Maybe he should call on you first, but forget that and you do the calling. See him at times, just to be seen. Absent treatment is generally problematic, and absent or long-distance friendship cultivation is often too cold for developing roots, to say nothing of fruits.

Ask him for information, not so much as a favor to you as a piece of self-help. Ask him something about that product, new to you, which you saw advertised in CLINICAL MEDICINE AND SURGERY. Do not embarrass him, but ask him to secure descriptive literature for you. Such a procedure will make a good start and help to break the ice. He needs your suggestions, as he is likely to become stale with sixteen hours a day, seven days to the week, within the four walls of his pharmacy.

Suggest your mutual advantage in using his windows for creating professional and laity goodwill. You personally cannot tell the sick public of your ability to treat colds and hay fever by the latest methods of small hypodermic injections, but he can. Just before school starts, suggest that he put in a simple, easy-to-understand window display promoting the various vaccinations—diphtheria, scarlet fever, smallpox and so on. Such a display will pay far better profits than those on school supplies, and he need not neglect the latter, nor will he.

Another practice builder for you is easily recognized if you ask him to brush up on his college work and put in a department for urinalysis. It need not be extensive. Microscopic analysis is not necessary at this stage of the game, as it is enough to examine for total acidity, albumin and sugar. Having done the work and collected his fee, the pharmacist should suggest to his customer, in a quiet, tactful manner, that there is "a trace of"—whatever it is—and that he had better see his doctor and have it attended to before it gets too far advanced. Suggest that he say glucose, not sugar, if this substance is present.

Even though you may make your own urinalyses, suggest the idea to him, as he sees five, ten, or twenty times as many of the public as you do. He can easily gather in a good deal of this profitable work, at a nominal charge, simply by means of a tactful suggestion. Such analyses should never be made while the patient (customer) waits, but always as a fill-in job, making a report six or eight hours later.

If you practice in a city, suburb, or small town having several pharmacists to whom your prescriptions naturally go, single out the best two or three and give them the same consideration and treatment as suggested.

This increases your independence, and still gives you "a friend at court," if one has to be scratched off your list for some reason. If possible, do not limit your interest and affection to only one pharmacist. Never be in the position of obviously trying to send your prescriptions to any one pharmacist.

I have seen these things done, to the mutual advantage of all three parties to the transaction—the patient, the pharmacist, and the physician. If this suggested team-work is to live and continue and grow, it will be effective only on a basis of mutual service.

Something must be done to bridge the gap between the efficient, out-of-work physician and the sick public. Never mind the enormous figures supporting this statement. You are interested, not in national statistics, but in conditions in your operative area—what is wrong and what to do about it. You and your pharmacist have both had, as a basic education, more college work than you are using. Bring out this latent knowledge. Work it for results.

Between you, work out a plan for regular physical examinations of the boy scouts, girl scouts, and gymnasium workers in your neighborhood. Suggest to your pharmacist that he put in a baby-weighing scale and keep a record of every baby regularly weighed. It will draw more infants and children in a week than you will see in a month.

"What will I get out of it?" is a fair question. This plan of physician-pharmacist teamwork will pay if you get nothing out of it but intangible goodwill. However, the law is still effective, "Whatsoever a man soweth, that will he also reap." You simply cannot fail to enjoy your practice more and get more practice to enjoy. A pharmacist has countless opportunities to send you a great deal of referred work. Aim for and get his goodwill —his and his clerks'—and seed-sowing of this kind, building for friendship, will pay you well.

Prescription writing is not always a perfect, finished piece of work. Many a time a friendly pharmacist has saved the day, and perhaps saved a life, by a tactful remark, and by suggesting a correction to the physician who has written a dangerous prescription.

To be abreast of the times a physician must know about new discoveries, new products, and new ideas. By calling on your pharmacist for help along these lines, you indirectly demand that he keep posted, and he, in turn, is naturally interested to pass to you facts that he feels sure you can use.

Teamwork like that suggested spells CO-OPERATION, in capital letters, prevents inroads by the physician and pharmacist into each other's prerogatives, and will have the Golden Rule in action sooner than any amount of State, Federal or Association legislation.

14th St. and Sheridan Rd.

NOTES AND ABSTRACTS

Case Records with a Snapshot Camera*

IT is quite possible to take good pictures in your office without difficulty, using simple, inexpensive equipment.

I assume that all you want is a reasonably good pictorial record of a broken arm or nose or something you hope to improve. You would like to get a picture of the "before" and "after," but you have been discouraged by photographic experts who have confused you with a lot of information about filters, factors, and similar folderol. You are willing to take the picture yourself if it is not too much bother to you and to the patient, but you do not want to grope around in a dark-room. Then, too, you don't want to pay a month's rent just to find out how valuable camera work can be to you.

For the whole business, including the film ready to shoot eight pictures, I paid exactly $4.26. The camera used is of the ordinary box type, costing $2.25. It takes a picture about 2¼x3¼ inches. That is usually big enough to see what you want without enlarging. At least it will enable you to pick out what you do want enlarged.

You will, however, need a portrait attachment (cost: about 90 cents) if you want to get within four feet of your subject. And you should by all means use panchromatic film. Your druggist will sell you a roll for 30 cents or so. This film gives you better tone values; without it, blood or bruises will register too dark and may make your picture worthless.

The question of illumination can be settled in a very simple and practical way. The pictures can be taken with the light of a small photoflash bulb at a distance of four feet. These bulbs sell for ten cents apiece in lots of a dozen. (Yes, that means that the cost of each picture is going to be well over ten cents, but you are not going to photograph every patient. Besides, when you need a picture, it is worth an extra dime to get one that will be bright and clear).

There's no danger in watching one of these

*Med. Economics, June, 1936.

bulbs go off, but it is better to shield your eyes and to warn the patient not to look toward the flash bulb unless it is necessary. Otherwise a blind spot remains in the line of vision for a few minutes.

Now let's take a picture and find out how easy it is.

1.—See that your camera is properly loaded and the film turned to the first exposure.

2.—Pose your subject in a comfortable position against a contrasting background.

3.—Place the camera on a small table or pile of books so that it points directly at the subject. You do not have to worry about the support being rigid because the flash is so brief. Don't have too much other illumination in the room. It might cause a faint image to register on the film while the shutter is open. Ordinary electric lights are all right.

4.—Place the portrait attachment over the lens. Be sure that the camera is the proper distance from your subject, usually four feet. Some portrait attachments allow a shorter working distance, others require a longer one. All are accompanied by directions, so you don't have to experiment.

5.—On the camera there is a slide arrangement that controls the size of the lens opening. Adjust it to the smallest aperture. This produces the sharpest picture and is possible because you are using the photoflash.

6.—Pull out the lever marked "time exposure."

7.—Hold the photoflash as near the lens of the camera as possible but above and behind it. No light should be thrown directly on the lens. The flash can be set off by ordinary house current, in which case all you need is an extension cord with a socket and reflector. If you prefer, you can buy a special battery handle and do away with the extension cord. But that costs another dollar and isn't necessary.

8.—You, your camera, and your patient are all set. Now do three things in *fairly rapid but deliberate* succession: (1) Trip the exposure lever; (2) set off the flash; and (3) immediately close the shutter by pushing the exposure lever back to its former position.

The picture has been taken. You're ready for another as soon as you turn the film to the next exposure. Take more than one picture of each subject as insurance against missing something.

Film development costs about ten cents a roll; each print, five cents. Therefore, including the price of flash lighting, each finished photo costs about twenty cents. Not cheap if you are taking a lot of pictures, but reasonable if you want to be sure that your important ones will turn out well.

W. S. KNIGHTON, M.D.

New York City.

A Plan for Medical Service*

THE Evanston Branch of the Chicago Medical Society is in process of working out a plan, along with the Evanston Consumers' Cooperative Society, for furnishing medical service to the members of the latter organization on some sort of a budget basis.

The plan now being tentatively considered would require a member to pay in 2.5 percent of the family budget (income). If this were $2,000 a year the payment would thus be $50; or $200 on an $8,000 income. This money would go to the Medical Society in lump sums, and would be distributed among the members on the basis of the amount of work done by each, in caring for those entitled to such service.

The member of the Cooperative Society would receive for his money, for himself and all members of his family, the following services:

1.—All necessary office visits.

2.—House calls, but the member would have to pay an additional dollar for each visit during the day and two dollars extra for every night call. This would discourage unnecessary house calls. Also a mileage fee beyond a given distance would be charged.

3.—All hospital work and hospital calls. (This group already has hospital insurance.)

4.—All necessary diagnostic and therapeutic services.

5.—All medical laboratory services.

6.—An annual physical examination.

7.—Necessary preventive medicine.

The following services would be excluded:

1.—Mental cases after commitment.

2.—Drug and alcoholic addicts.

3.—Tuberculous patients after institutionalization.

4.—Orthopedic cases that are eligible for aid from other sources.

5.—All cases covered by workmen's compensation.

6.—Accidents covered by liability insurance of any kin[illegible].

7.—The right of subrogation.

HAROLD C. LUETH, M.D.

Evanston, Ill.

[This plan seems to possess points of distinct merit, and to obviate some of the disadvantages of other plans hitherto proposed. We shall be glad to receive comments from our readers on this plan or any other arrangement for assuring medical care to the whole public on a voluntary basis.—ED.]

*Adapted from *Bul. Evanston Br. Chicago M.S.*, Apr., 1937.

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 4 (Medical)

Presented by George B. Lake, M.D., Waukegan, Ill.

(See CLIN. MED. & SURG., Apr., 1937, p. 173)

RECAPITULATION: A young, single woman of 25 years, with a negative family history, who had always been well except for a tendency to "biliousness" (in one of which attacks her appendix had been removed), began to have attacks, at midmorning or afternoon, of weakness, dizziness, trembling, and sweating, followed by nervous irritability. One day she fainted in her chair, and was confused for two days afterward. Then she began to have attacks in bed, in the early morning, in which she was restless and occasionally bit her tongue, twitched, and passed urine involuntarily, after which she was somewhat confused for several hours.

The *physical examination* revealed no abnormalities except a slightly rapid pulse (92); a slightly low blood pressure (110/72); somewhat dilute urine (sp.g. 1.014); and moderate secondary anemia.

Requirements: What is your tentative diagnosis? What further examinations would you suggest and what treatment would you prescribe?

Discussion by Leon Reznikoff, M.D., Secaucus, N. J.

Because of the history of several attacks of dizziness, with loss of consciousness on one or two occasions, involuntary passage of urine during another attack, and biting of the tongue at some other time during a nocturnal attack, *epilepsy* should be considered as the most likely diagnosis.

Although there were some attacks without the typical symptoms, we must remember that, while the convulsive seizure constitutes the essential feature or "true idiopathic" epilepsy, not infrequently we see atypical attacks in patients who show only psychic equivalents; and, on the other hand, other patients who, in addition to grand mal attacks, have petit mal or even some lesser attacks.

According to the history, the patient remained confused, hazy, and drowsy following the attack, and had amnesia for the episodes. This further confirms the diagnosis of epilepsy. It is, however, generally difficult to make a definite diagnosis of epilepsy on history alone, unless one has an opportunity to observe the attack.

Of course, all possible examinations should be made to rule out any intracranial organic disease, such as brain tumor or neurosyphilis, and therefore the patient should have a complete neurologic examination, a roentgenogram of the skull, and ophthalmoscopic and spinal fluid examinations.

If the diagnosis of epilepsy should finally be reached, the treatment must consist of psychotherapy and sedatives, such as phenobarbital and bromides, according to the needs of the individual case. Should the patient be hospitalized, more extensive methods of treatment may be tried, such as dehydration, or salt-free and ketogenic diets.

Discussion by H. J. Harrell, M.D., Hynes, Calif.

The symptoms of this young woman—"fainting spells" early in her condition, followed later by weakness, dizziness, trembling, sweating, blurring of vision, and finally seizures of unconsciousness, accompanied with vomiting, twitching, loss of sphincter control, and biting her tongue, with no recollection of the attacks—very strongly suggest *epilepsy*, due to a slow-growing tumor of the brain.

I should suggest a thorough x-ray study of the head.

Discussion by Angelo A. Barberio, M.D., Brooklyn, N. Y.

The past history and present symptoms in this case suggest a tentative diagnosis of *hyperinsulinism*. A fasting blood sugar test, followed by a glucose (dextrose) tolerance test, should be made.

Seale Harris has reported cases with diagnoses of hysteria, cholecystitis, and duodenal ulcer (to mention only a few), in which the real cause was hypoglycemia, due to excessive secretion of insulin.

During the attack the patient should be given soluble sugar, such as orange juice. Seale Harris has recommended a low-carbohydrate, high-fat diet, with frequent feedings, in some of his cases.

I think that this case should be worked up along these lines.

Discussion by Ralph L. Gorrell, M.D., Clarion, Iowa

My first impression is that this patient presents symptoms compatible with a tentative diagnosis of *spontaneous hypoglycemia (hyperinsulinism.)* To support such a diagnosis, there should be a history of weakness, syncope, hunger, sweating, or even convulsions, which occur some hours after a meal and *are relieved by ingestion of food,* and a low fasting blood-sugar reading.

If not explained by a low blood sugar, her epileptic attacks and psychic epileptic equivalents should be investigated for the possibility of idiopathic epilepsy.

The part played by the biliary tract is not exactly clear. The history of jaundice, at birth and subsequently, might suggest congenital hemolytic jaundice, except that there is no enlargment of the spleen and no marked anemia. Disease of the liver or gallbladder cannot be ruled out.

Treatment cannot be planned until the diagnosis is completed. Hypoglycemia could be handled by several methods: (1) Low-carbohydrate, high-fat diet; (2) frequent feedings of small meals; (3) insulin treatment, as worked out by Henry John.

If no cause can be found for the epileptic symptoms, weekly spinal puncture and withdrawal of gradually increasing amounts (10, 15, 20 cc.) of spinal fluid, followed by replacement of an equal amount of air, will prevent the onset of many or all of the convulsions.

Discussion by G. M. Russell, M.D., Billings, Mont.

Tentative diagnosis: petit mal epilepsy.

I should want an examination of the eye grounds, x-ray studies of the head, examination of the spinal fluid, and a basal metabolism test.

Treatment on the basis of the tentative diagnosis: phenobarbital, ¾ grain (48 mg.) three times a day, and a ketogenic diet.

Discussion by John Clark, M.D., Independence, Kans.

This woman comes for the relief fainting spells. On investigation we find that she has been in excellent health all of her life except for an occasional bilious attack, attended with dizziness, nausea, and vomiting. Two years ago she had an appendectomy. One year from that date her spells changed to weakness, dizziness, trembling, sweating, and blurring of the vision. About six months later she had a spell of unconsciousness, being confused and stuporous for two days. Then for three months she seemed well; then one morning early she has a spell in bed. This one also was followed by mental confusion and drowsiness. In the past three months the night attacks have exceeded those in the day.

We are not told the exact age at which these attacks started, but we can be fairly certain they started as petit mal epilepsy, for which the common term "biliousness" (whatever that means) was applied, including the attendant dizziness, nausea and vomiting. In the end she has two attacks of unconsciousness, with drowsiness for a day or so. *Grand mal epilepsy* looks like a rational diagnosis.

But there may be something else here. Weakness, dizziness, trembling, sweating, and blurring of vision made their appearance about one year after her appendectomy. These symptoms may be the result of disturbance of some endocrine gland, and Graves' disease is the first thing I think of. The physical examination shows that the heart is all right; no mention is made of tremor; she is "nervous"—but we must not assume too far on these symptoms. Some symptoms, such as sweating and weakness, will, however, be hard to dispose of under any other heading.

I see nothing in this history which connects her infantile jaundice and that at twelve years of age with her dizziness. Her jaundice in infancy was probably a physiologic process, while that at a later time, since we have no history of pain with the attack, was probably due to catarrh of the ducts. Jaundice producing dizziness would long ago have asserted itself positively.

I can think of no other condition quite as likely as epilepsy, starting in early life as petit mal, with a side issue of Graves' disease following an operation, and this followed by the further distressing condition of grand mal.

Discussion by E. Powell, M.D., West Monroe, La.

The usual routine interpretation of the symptoms in this case would probably be that they are psychogenic and originating from an emotional shock which was perhaps received in early childhood. The conscious mind constantly strives to keep this unpleasant experience submerged in the unconscious; it in turn attempts to penetrate the conscious. The conscious sends down "the wave of inhibition," which first strikes the "receptor-thalamic stretch," the thalamocortical is released, and disorientation results. As

the association pathways succumb, complete unconsciousness appears and there is release of the efferent systems. The cortico-cerebellar is first activated and muscular relaxation results. She should be psychoanalyzed, the repression brought into the conscious and understood, mastered and properly adjusted. Failing in this approach, mental re-education might be tried, and if both fail she should be placed in some psychopathic institution.

I think the above is all "hooey." Make a study of her blood sugar. I believe you will find this a case of *hyperinsulinism.*

My female hypoglycemic patients are all scanty menstruaters. They give a history of "normal," but close questioning reveals that they flow for three or four or five days, but stain or slightly soil only one or two Kotexes a day. I have concluded that the overactive pancreas causes hypomenses, but I have not been able, thus far, to improve the menstrual output after controlling the pancreas.

Solution by Dr. Lake

A careful physical examination of this patient ruled out all obvious anatomic disorders, and there was no evidence of psychic instability, introspection, hypochondria, nor malingering. The difficulty, then, was clearly physiologic—probably a disturbance of the metabolic or endocrine balance, or both.

The history of attacks occurring in the very early or midmorning, or in midafternoon, when the stomach was empty, at once suggested the possible presence of *hyperinsulinism* or hypoglycemia, and as a therapeutic test, the patient was directed to take 2 tablespoonfuls of Karo syrup (dextrose), in lemonade, at 4:30 and 10:30 A.M. and at 4:30 P.M., for one week. During this week she had no attacks whatever, and reported that she felt more like herself than she had for some time.

With this confirmatory evidence, a *dextrose tolerance test* was ordered, the report of which was as follows: Fasting blood sugar, 60 mg. per 100 cc. of blood; one hour after administration of dextrose, 90 mg.; second hour, 80 mg.; third hour, 75 mg.; fourth hour, 70 mg.; fifth hour, 65 mg.; sixth hour, 60 mg. This confirmed the tentative diagnosis.

Treatment: The patient was directed to continue taking the Karo syrup or "Dyno" (powdered dextrose), as she did in the therapeutic test, until the dietary treatment, as explained by Dr. Ellis Powell, in the April, 1936, issue of CLIN. MED. & SURG., page 178, could be arranged and instituted, after which the extra dextrose feedings were gradually reduced and finally discontinued.

The patient's response to this treatment was positive and reasonably prompt. She has had no more attacks since it was started. Now (after six months) she is very gradually increasing the variety of her dietary and seems to be on the way to complete recovery; but she will probably have to continue on a more or less strict diet for another six months or a year before she can be considered entirely well, and even then be prepared to resume it if symptoms should reappear. At present there seems to be no evidence of a pancreatic tumor which calls for operation.

Problem No. 6 (Diagnostic)

Presented by Drs. J. D. Kirshbaum and R. H. Jaffé, Chicago, Ill.*

THE patient was a 56-year-old white male, who was first admitted to a medical ward with a history that he had been in good health until three weeks before admission, when he noticed that he was becoming intensely jaundiced. During this period he thought he had lost 40 pounds in weight. His appetite was poor and he experienced a feeling of fullness in the epigastrium and eructations following his meals. His urine had a deep brownish color.

His *past history* was negative.

Examination disclosed an emaciated white male, not acutely ill. The skin and conjunctivae were markedly icteric. The heart and lungs were negative. His teeth were in very poor condition, with marked pyorrhea alveolaris. The liver edge extended an inch below the costal margin. It felt smooth, firm, and was tender.

Repeated examinations of the *stools* were positive for chemical blood, but no bile was present. The *urine* showed much bile on four occasions. The *blood* showed a slight anemia: Hemoglobin, 80 percent; red cells, 4,050,000; leukocytes, 12,800. The blood Wassermann reaction was negative. The blood icterus index was 125 mg., and one week later dropped to 93.75 mg. per 100 cc. of blood. A Graham-Cole test showed nonvisualization of the gallbladder.

Requirements: (1) Suggest the probable diagnosis, giving reasons. (2) What further examination would *you* have made? (3) Suggest treatment.

*Adapted from *Bul. Chicago M. S.*, Mar. 27, 1937.

SCIENTIFIC THINKING

The scientific habit of thought is nothing but trained and organized common sense. The man of science, in fact, simply uses, with scrupulous exactness, the methods which we all, habitually and at every moment, use carelessly.—THOMAS HUXLEY.

CLINICAL NOTES and ABSTRACTS

Foreign Protein in Skin Diseases

IN the summer of 1929 I was in the skin clinic of the Royal Waterloo Hospital, in London, and in the course of the afternoon a child was brought in with a very extensive urticarial eruption over the entire body. The clinician in charge promptly withdrew 3 cc. of blood from a vein and injected it into her buttock. He said that he had obtained splendid results in similar cases, and I have no doubt that he had.

Now, however, foreign proteins are already prepared and ready for instant use, and their employment in suitable cases gives most astounding results.

I remember the case of a beauty operator who came to the office covered with an urticarial eruption that had been present for ten weeks. She had been treated by three doctors, who had been unable to give her any relief, and the presence of the eruption on her arms and neck prevented her from continuing her occupation. She was given a single ampule, intramuscularly, of Foreign Protein (Lakeside), double strength, and the following day the eruption had disappeared.

Not long ago I was called to the residence of a young working man who had phoned that he was about to go insane with itching of the skin, and wanted relief. He had a diffuse giant urticaria, and was in constant motion in an attempt to allay the irritation. He was given 1.5 cc. of foreign protein, double strength, intramuscularly, and by the next morning the eruption had completely disappeared.

Last week a boy of twelve years was brought to the office by his parents, a picture of intense misery. He was covered with a toxic eruption that had been modified by three weeks of intensive, but ineffectual, treatment with local remedies, and also with ultraviolet rays. The picture was almost like eczema rubrum, with red, inflamed, and oozing skin, and the boy was in a half-fainting condition from loss of sleep and continual irritation.

He was given 1.5 cc. of foreign protein, double strength, following which he slept for five hours, awakened feeling much refreshed, and the next day the eruption was practically gone.

For immediate relief, and until the foreign protein takes effect, a lotion is used.

℞

Calamine	ʒiv	------- 16.00 Gm.
Zinc Oxid.	ʒiii	-------12.00 Gm.
Zinc Sulph.	gr. viii	------- 0.50 Gm.
Glycerine	ʒi	---------- 32.00 cc.
Aq. Calcis	q.s. ad ʒiv	----------120.00 cc.

In some cases of acne vulgaris, foreign protein will cause an almost complete disappearance of the lesions in 48 hours. It is one of the most useful preparations in our armamentarium.

R. S. MACARTHUR, M.D., C.M.
Los Angeles, Cal.

Care of Wounds*

NEVER leave dressings on wounds of the face for more than twenty-four hours. Dressings about the openings of the mouth, eyes, and nose retain decomposing secretions against the wound.

2.—Never suture tightly (tissue will die).

3.—Never leave buried catgut in a wound. Tie vessels with fine steel wire. Catgut buried under the skin produces a wheal and an inflammatory process which progresses so that, at the end of a week, there is a zone of reaction and necrosis about each strand. Thus, *firm healing is delayed until the catgut has been absorbed* and the local damage to the tissues from the catgut repaired; from silk buried under the skin, there is only a slight redness at the end of the week; from rustless steel wire, no flare or wheal in four months.

4.—Never leave a drain in a non-infected wound (it provides a path for the entrance of surface bacteria into the wound).

5.—Never use strong antiseptics (they will delay healing, despite high bactericidal power). Clean the skin with ether, followed by 3½ percent iodine. For wet dressings, bichloride of mercury, 1:4000, or weak iodine solution. Bromine, 1:4000, cleans up fetid wounds.

6.—Never let a limb remain under tension.

*A. J. Surg., April, 1937.

Swelling under the skin, fascia, or muscle sheath, due to hemorrhage or edema, should be relieved by a long incision from uninjured tissue above the uninjured tissue below, to prevent necrosis and gangrene.

7.—Never accurately suture a badly lacerated limb (skin, tendons, nerves, muscles), as the first consideration is the prevention of secondary tension or retention of secretions. More trauma will be added by prolonged manipulation, clamping, suturing, etc.

8.—Never incise a streptococcic infection, especially in the presence of acute lymphangitis; instead prescribe absolute rest in bed; lightly splint the extremity; apply hot wet dressings; give blood transfusions of 150 cc. every third day until the temperature returns to normal.

9.—Never skin graft a small denuded area. Sterilize the granulating surface with 10 percent zinc chloride, blot, and remove the granulation tissue with a sharp knife; undercut the surrounding skin until it can be brought together over the area.

W. Wayne Babcock, M.D., F.A.C.S.
Philadelphia, Pa.

Look for THE LEISURE HOUR among the advertising pages at the back.

Contraindications to Pregnancy*

THE contraindications to pregnancy that I am presenting are those taught to our medical students. We hope that some of these students will go out into practice and bring the preventive aspect of obstetrics to the type of patients with which we are dealing in this paper. The contraindications taught are:

1.—*Too-frequent and poorly spaced pregnancies.* We have but one means of contact with these patients in the rural districts—when they come to the hospital for delivery. To this group, of course, we can give adequate preventive advice, because we do feel that too-rapid and poorly spaced pregnancies make for disease in these women. We also have a great number of patients who literally are unable to acquire an adequate diet in the non-pregnant state, and when we add numerous pregnancies to this metabolic condition, we feel that we put the woman in a definitely hazardous position.

2.—*Developmental defects in the mother.* Occasionally we find women who have developmental anomalies of the birth canal. We feel that this type of woman should be protected from a pregnancy until we are able to hospitalize her for corrective measures.

3.—*Following recent pelvic operations,* as repair of lacerations, fistulas, prolapsus, and after a recent cesarean section.

4.—Patients with *malignant disease of the pelvis* who are under radiation therapy.

5.—Patients with *pelvic neoplasms,* prior to operative or other corrective measures.

6.—*Diseases of the kidney:*—previous nephrectomy, nephritis, and tuberculosis.

7.—*Diseases of the heart:*—myocarditis, rheumatic heart disease, cardiovascular renal disease, and essential hypertension.

8.—*Diseases of the lung:*—tuberculosis, bronchiectasis, etc.

9.—*Diseases of the blood:*—anemia, leukemia.

10.—*Diseases of the skin:*—dermatitis herpetiformis.

11.—*Nervous system and mental diseases:*—Huntington's chorea, hereditary optic atrophy, dementia precox, manic depressive psychosis, chorea, multiple sclerosis, myelitis, etc.

12.—*Eugenic Board patients:*—patients passed on by the Eugenic Board for sterilization. Certainly, in the interim between the passing of the Board on the case and their admission to the hospital, these patients should be guarded against possible pregnancy.

13.—*The toxemias of pregnancy.*

14.—*Metabolic disturbances:*—diabetes, hyperthyroidism, hypothyroidism, tetany, osteomalacia, malnutrition, and avitaminosis.

15.—*Diseases of the eye:*—neuritis of the optic disc and albuminuric retinitis.

16.—*Diseases of the ear:*—otosclerosis.

17.—*Miscellaneous indications:*—varicosities, gallbladder disease, and many other conditions.

This is a didactic list compiled from numerous articles appearing on the subject of contraindication to pregnancy. It is a list that we present to students in the hope that it will call to their attention the absolute necessity for preventive medicine in the field of obstetrics.

Bayard Carter, M.D.
Duke University, School of Medicine,
Durham, N. C.

*J. Contraception, Jan., 1937.

Prevention of Urinary Stones in Bed Patients*

IF it is necessary to keep patients in bed at rest for weeks or months, watch for the development of urinary calculi, due to urinary tract stasis (also, of course, for pneumonia and bed sores).

Especially after bone injuries, fractured spines or hips, and bone infections, complete immobilization has been followed by the formation of renal stones in such a short time as four months.

Stone formation may be prevented in many, or all cases, by giving vitamin A, as carotene, Haliver or cod-liver oil, and vita-

*Archiv. Surg., Apr., 1937.

min A-rich foods, such as eggs, cream, and butter. Foods tending to make the urine acid (meats, cereals, bread, beans, corn, eggs) are a necessary part of the treatment, as stones form more readily in alkaline urine. The patient should be turned in bed; if possible, he should be turned over on his abdomen, so that kidney drainage will be better. When a person is flat on his back the kidney pelvis is higher than the kidney, so that drainage is from the highest point.

Stones should be thought of when a bed patient complains of back pain or colicky abdominal pain.

DRS. C. C. HIGGINS and F. C. SCHLUMBERGER.
Cleveland, Ohio.

The products we advertise are worthy of your attention. Look them over.

Mild Hypothyroidism in Children*

THE active principle of the thyroid gland, thyroxin, through its catalytic action on chemical changes in all of the body cells, normally has a tremendous influence on all the body functions. Variations in the activity of this gland, resulting in either increased or decreased output of thyroxin, produce changes in function in every tissue of the body. The symptoms of hypothyroidism are, therefore, many and varied.

The diagnosis of mild hypothyroidism in children is made from the clinical history, when possible confirmed by a lowered basal metabolic reading. Physical examination adds no positive evidence.

The most important symptoms are lack of energy, shown particularly by a disinclination for physical activity and undue fatigue, moderate mental sluggishness and emotional instability, accompanied at times by behavior problems or mental changes, particularly on the depressive side, and various indefinite pains in different parts of the body. Other less common symptoms are constipation, diminished tolerance for cold, headaches, and irritability.

With the aid of an excellent technician, I have found the basal metabolic test to be entirely satisfactory in children as young as six years of age. In taking metabolism tests in hypothyroid children there is an added factor in safety of interpretation in the fact that any error, through leakage or lack of cooperation, will be on the plus side. It is well, however, to remember that lowered activity of the thyroid gland is not the sole cause of lowered metabolism. Other causes are inanition, anemia, hypopituitarism, ovarian hypofunction, Addison's disease and depressed mental states. Many investigators believe that the normal range of the metabolic rate is wider than from plus 10 to minus 10, and are inclined to consider lightly readings as low as minus 20. There is apparently no variation in rate due to differences in climate.

As further aids in diagnosis and control of treatment in severer types of hypothyroidism in children, the blood-cholesterol level, the extent of renal excretion of creatine, and roentgenologic determination of bone age have been found to be very useful.

Complete replacement therapy in children who have total absence of thyroid function requires from 2 to 4 grains of thyroid per day. In these children with mild hypothyroidism, the effective dose is never more than one-fourth this amount. I have, with considerable caution, administered thyroid extract to several children too young to have metabolism tests and to one child whose symptoms were very suggestive, but whose rate was normal. I have been unable to find any evidence that this is dangerous procedure.

In prescribing thyroid extract it is important to remember that the preparations put out by different manufacturers vary considerably in calorigenic effect. For this reason, any one particular product should be specified, in order that the refills will be of the same strength. Original sealed packages should be ordered, as the substance deteriorates with age due to bacterial decomposition. Most authorities agree that the use of thyroid extract is preferable to thyroxin in children.

The therapeutic objective is to relieve the child from all symptoms with the smallest possible daily dose of the dried gland. Therapeutic response is usually very prompt, there being definite improvement within 48 hours. Failure of symptomatic improvement will usually mean that the underlying cause is not thyroid deficiency.

The duration of the treatment necessary varies considerably. A small number of these children, after treatment for from one to three months, seem to be in perfect health and apparently no longer need thyroid extract.

JOHN R. ASHE, M.D.
Charlotte, N. C.

*South. M. & S., Nov., 1936.

Medical Treatment of Ménière's Syndrome*

THE pathologic anatomy of Ménière's syndrome (deafness and tinnitus, accompanied by attacks of vertigo, vomiting, and nystagmus) is not known. Therefore many methods of treatment (mostly surgical) have been tried, with some success.

The medical treatment recommended by

*J. A. M. A., Apr. 3, 1937.

Dr. A. C. Furstenberg, in 1934, has relieved the attacks of vertigo and vomiting in 12 cases which I have treated by this method, which is carried out as follows:

1.—Low salt content diet.

2.—*Medication.* Ammonium chloride, 3 Gm. with each meal, in capsules (six capsules each containing 7½ grains—0.5 Gm.—taken during the meal), three days on and two days off. The capsules should not be replaced by the chocolate coated or the enteric coated pills, because the latter sometimes pass through the gastro-intestinal tract without being absorbed. The ammonium chloride can be given in this dosage for an indefinite time without injurious effects. We have had patients with nephritis receiving ammonium chloride in this manner for a period of five years.

3.—Water intake unrestricted.

4.—*Diet:* Approximate neutral, low-sodium diet (about 87 milliequivalents of sodium).

Group A: The following foods may be taken daily:

a. Eggs, meat, fish, and fowl, as desired.
b. Bread, as desired.
c. Cereal, one of the following: farina, oatmeal, rice, puffed rice, or puffed wheat.
d. Potato and one or more servings of any of the following: macaroni, spaghetti, rice, corn, cranberries, prunes, plums.
e. Milk, as desired.
f. Vegetables and fruits daily (any fruit and any vegetable not included in groups B and C), as desired.
g. Butter, cream, honey, jellies, jams, sugar, and candy permitted, as desired.
h. Tea and coffee, as desired.

Group B: Foods to be avoided: All salt meats and fish, or bread, crackers and butter prepared with salt; carrots, clams, condensed milk, raisins, caviar, cowpeas, olives, spinach, cheese, endive, oysters.

Group C: Foods to be taken no more than twice weekly: Lima beans, beets, buttermilk, cauliflower, celery, chard, dried coconut, dried currants, dates, figs, horseradish, kohlrabi, limes, muskmelon, peanuts, peaches, mustard, pumpkin, radishes, rutabagas, strawberries, turnips, turnip tops, watercress.

Note: All food to be prepared and served without salt.

Preparations containing sodium to be avoided: Sodium salicylate, bicarbonate, bromide, tartrate, iodide, nitrite, phosphate, thiosulphate, benzoate, sodium phenobarbital and amytal, compound effervescent powders, potassium and sodium tartrate, and baking powder.

MADELAINE R. BROWN, M.D.

Boston, Mass.

State Medicine is poorhouse medicine. Tell your patients.

The "Benzedrine Inhaler" in Children

WE have used Benzedrine (benzyl methyl carbinamine), in the vapor phase, in 100 cases of nasal congestion in children. The ages of the group ranged between 2 months and 12 years, with 11 under 1 year of age.

In 97 percent, or all but 3 cases, Benzedrine vapor diminished engorgement, established ventilation, and relieved congestion promptly and effectively. With nursing infants this form of therapy was particularly effective.

Discomfort following its administration was mild and infrequent, and in no instance severe enough to cause discontinuance of the treatment. No systemic reactions, such as restlessness or sleeplessness, were observed; nor did continued use produce tolerance, atony, nor bogginess.

We are convinced that "Benzedrine Inhaler" therapy is effective and acceptable to the child patient. At the same time it tends to eliminate the pain and discomfort which so often complicate the administration of liquid vasoconstrictors.—DRS. JOSEPH A. SCARANO and JOHN F. COPPOLINO, in *Arch. Pediat.*, Feb., 1937.

Silver Nitrate Sticks in Chronic Fistulas

THE sinus or fistula (tuberculous or osteomyelitic) is probed to determine its direction and depth. If the sinus is narrow, it is gently dilated with a hemostat. A silver nitrate stick is carefully inserted into the sinus, and left in place, a zinc oxide dressing is liberally applied to the surrounding skin, and the entire area is bandaged. After two or three days, the thickened, grey sinus tract is removed with forceps and the red, granulating canal washed out with hydrogen peroxide. Healing frequently followed this simple, harmless procedure.—E. FREUND, M.D., in *J. A. M. A.*, Apr. 11, 1936.

CLINICAL MEDICINE AND SURGERY is a wonderful magazine, and contains much useful knowledge, especially this Parenteral Therapy number.—L. E. A., M.D., S. Dak.

DIAGNOSTIC POINTERS

New Normal Blood Standards

THE new normal blood standards, based on accurate hematologic data, are: Red cells, in males, 5.4 million per cmm., with a range from 4.6 to 6.2 million; in females, 4.8 million, range 4.2 to 5.4 million. Normal hemoglobin values, average 16 Gm. per 100 cc. in males, range 14 to 18 Gm.; in females, average 14 Gm., range 12 to 16 Gm. The gram method of recording hemoglobin is more accurate than the percentage method.*—RICHARD H. YOUNG, M.D., in *Bul. Evanston Br. Chicago M. S.*, April, 1937.

Bitterling Test for Pregnancy

THE recently-announced test for pregnancy, using the bitterling (a small Japanese fish) instead of mice or rabbits, is not proving sufficiently specific to be of clinical value.—PROF. GEO. W. BARTHELMEZ, Univ. of Chicago.

Tumors of the Breast

PAIN is a late, not an early symptom of cancer of the breast. Multiple tumors are generally benign. If the nipple is retracted, and will not come up into position when the breast is compressed, the condition is probably cancer. Do not rely too much on transmitted light in the diagnosis of cancer. One percent of all breast cancers occur in males. —JOHN F. ERDMANN, M.D., N. Y. P. G. Hosp. and Med. School, New York City.

Polyposis

A TENDENCY to polyposis is a constitutional, not a local, affair, and must be treated by general measures, such as the correction of metabolic deficiencies (minerals, thyroid, etc.). Polyps may develop on any mucous surface, but are most common in the nose and uterus. Nasal polyposis *always* follows hyperesthetic rhinitis, if it is not properly treated.—BURTON HASELTINE, M.D., F.A.C.S., Chicago, Ill.

*Hemoglobin values stated in grams per 100 cc. can be reduced to percentages by *dividing* the amount by 14; percentages are reduced to grams by *multiplying* the figure by 14.—ED.

Gonorrhea and Syphilis

INFECTION with syphilis may be masked by gonorrhea, where the primary lesion occurs in the urethra in the male, or in the vagina, cervix, or urethra in the female. Regular examination of cases of gonorrhea, in the early stages, particularly, should include palpation in the male along the urethra, for swelling, and dark-field examination of the discharge where there is any suspicion of syphilis; and routine examination of the urethra, vagina, and cervix in the female, for primary chancre, with accompanying dark-field examination of suspicious lesions.

Repeated blood examination, in apparently uncomplicated gonorrhea, revealed eight cases of syphilis, which otherwise would have remained undetected.—PAUL S. CARLEY, M.D., U. S. Pub. Health Serv., in *Ven. Dis. Inform.*, Feb., 1937.

Protamine Insulin

THE symptoms of hypoglycemia after protamine insulin are different from those after plain insulin. There is no sweating, tremor, or nausea. Headache and weakness call for sugar to relieve the condition.—RUSSELL M. WILDER, M.D., Mayo Clinic, Rochester, Minn.

Leukopenic Index in Vasomotor Rhinitis

THE diagnostic accuracy of the leukopenic index, in cases of vasomotor rhinitis, materially exceeds that of the usual skin tests and clinical routines. This more than compensates for the extra time and effort involved. —MICHAEL ZELLER, M.D., Chicago, Ill., in *J. Lab. & Clin. Med.*, Sept., 1936.

Tuberculosis

ALWAYS be on the lookout for tuberculosis, even though you may run the risk of being called a crank for your pains. Never label an illness "influenza," in the absence of an epidemic, without subsequently studying a roentgenogram of the chest, to make sure. —GEORGE H. DAY, M.D., in *J. State Med.*, Jan., 1937.

THE DOCTOR'S STUDY

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

I have ever gained the most profit, and the most pleasure also, from the books which have made me think the most.—J. C. HARE.

Houston: Art of Treatment

THE ART OF TREATMENT. *By William R. Houston, A.M., M.D., F.A.C.P., Formerly Professor of Clinical Medicine, University of Georgia; Formerly Visiting Professor of Medicine, Yale-in-China. New York: The Macmillan Co. 1936. Price, $5.00.*

The clinical practice of medicine is not, and never can be, wholly scientific, though it must be founded upon a thorough knowledge of the basic sciences. It always has been and always will be an art, though that fact has been too largely overlooked by medical teachers during the past generation or so.

Treatment of the sick is the only valid justification for the existence of the medical profession; and since that is so, this volume may properly be considered as one of the most important contributions to medical literature during several decades.

Says Dr. Houston: "Medical thought is rightly oriented only when every effort is bent toward treatment . . . The practice of medicine means therapeutic action that is the logical outcome of knowledge . . . The design of this book is to encourage therapeutic thinking . . . it will be unsatisfactory to one who wishes, at a glance, to learn 'What is good for this or that?'"

Here one finds the counsels of a man who is, not only a clinician of ripe and well-digested experience, but also a sane and practical philosopher and a well-rounded and sympathetic human being.

To say to a sincere and intelligent physician that this book is "as fascinating as a novel," would be faint praise. It is like a series of personal consultations with one who is a scholar in many lines, and who also has the rich and wholesome sense of humor that comes from loving and studying *people*. The style is easy and simple, without any sacrifice of accuracy or elegance. One reads on, page after page, without any sense of the passage of time.

The volume is divided into seven "Books." Book I, The Art of Therapeutics, includes such sub-heads as Honesty, Economics, The Doctor as a Therapeutic Agent; Book II, Patients Who Are to be Treated Chiefly by Nursing Care; Book III, Specifics; Book IV, Conditions in which the Chief Therapeutic Method is Psychotherapy or Guidance (his discussion of psychoanalysis is almost worth the price of the book); Book V, Diseases which Impose a Limitation Upon Life as the Condition of Treatment (obesity, heart disease, arteriosclerosis, etc.); Book VI, Disorders in which Physiological Considerations Guide Treatment (peptic ulcer, gout, Bright's disease, etc.); Book VII, Conditions in which Treatment is Tentative and Experimental (arthritis, allergic diseases, etc.). The index is ample and the bookwork satisfying. There are more than 700 pages of text.

If it would be possible to make every young medical man pass an examination on the contents of this volume before he could obtain a license to practice, the standard of medical service in this country would rise rapidly. Failing that, it should be a required text in every medical school, and it is safe to say that any clinician in any branch, who will study this book carefully and apply its teachings consistently, can increase his professional and fiduciary success from 25 to 100 percent in a year or two. There is no way in which a physician can invest the small sum of $5.00 so profitably as in the purchase of this book—provided he studies it and makes daily use of what he learns.

Mason: Preoperative and Postoperative Treatment

PREOPERATIVE AND POSTOPERATIVE TREATMENT. *By Robert L. Mason, A.B., M.D., F.A.C.S., Assistant in Surgery at the Massachusetts General Hospital. Illustrated. Philadelphia and London: W. B. Saunders Company. 1937. Price, $6.00.*

The author states that his book is intended to present a detailed consideration of the preparation and after-care of surgical patients.

The good surgeon is primarily a good physician; as such, he not only understands the basic derangement from which the patient suffers, but he sees more clearly the value of the cooperation of the internist; such teamwork not only makes for a better understanding of the problems of both but, what is more important, the interests of the patient are better served. The surgical operation itself is but a part of the whole treatment; operative treatment is part of cooperative treatment.

On reading a book such as this, one views with more sympathy that era of therapeutics, prior to the onset of the *furor operandi*, when the surgeon was an accessory called by the physician to operate and when the onus of pre- and postoperative treatment was the responsibility of the physician alone. We seem to be partly returning to that era, although the technical methods differ, since the surgeon is now concerned with the physiologic and other disturbances which his work occasions.

The book is divided into two parts: Part I is general and deals with the surgical risks, investigation, and methods of preparing patients, as well as the general principles governing postoperative care, with the management of complications that are more commonly observed. Part II is regional. It covers the pre- and postoperative care in special regional surgery.

Several of the chapters have been contributed by collaborators.

Although primarily this is a surgical book, yet all physicians who work in hospitals or have patients whose ailments may require surgical treatment should be interested in a systematic descriptive work of this kind.

Shields: Hay Fever

HAY FEVER. With Special Reference to Treatment by Intranasal Ionization. *By Clive Shield, B.M., B.Ch. Oxon. Clinical Assistant Physiotherapy Dept. St. George's Hospital. Oxford University Press, London: Humphrey Milford. 1937. Price, $2.50.*

The objects of this monograph are two: to give practitioners and students a description of the author's technic of intranasal zinc ionization in the treatment of hay fever, and to present some account of the anatomy, physiology and pharmacology of the vasomotor mechanism of the nose.

In the absence of any completely satisfactory explanation of the action of intranasal zinc ionization, the author advances the following tentative hypotheses: that, in allergic nasal conditions, there is a local ionic imbalance, associated possibly with alterations in the calcium content of the tissues of the nose, which permits the development of an "allergic reaction" manifested by edema, increased secretion and hypersensitivity. Treatment by zinc ionization results in the hypersensitive mucosa being rendered less sensitive by the application of a coating of zinc albuminate to the living membrane and the impregnation of the cells constituting that membrane with the same substance. The action is local; there is no direct desensitization of a general nature.

All rhinologists will want this British presentation of a clinically important subject; and all physicians who do this type of work will find the book useful.

Wiggers: Physiology

PHYSIOLOGY IN HEALTH AND DISEASE. *By Carl J. Wiggers, M.D., Professor of Physiology in the School of Medicine of Western Reserve University, Cleveland, Ohio. Second Edition, thoroughly revised. Illustrated with 191 engravings. Philadelphia: Lea & Febiger. 1937. Price, $9.00.*

This work contains a wealth of information, well organized, well written, and of the greatest importance to the study and understanding of physiology in its relations to modern clinical medicine. It is a storehouse of critically selected information, of equal value to those who are essentially interested in pure physiology and to clinicians and pathologists. The material is so organized as to make essential facts readily accessible. The index and bibliographies are ample.

In this (second) edition, the discussions of many topics which were treated but briefly in the first edition have been expanded, including the biophysical principles, special senses, neurohumoral agents, pain, and pulmonary affections. The language has been clarified and the presentation simplified throughout. Clinical material has been used in the discussion of physiologic principles, and the facts and conceptions established by experiment are applied to the analyses of clinical conditions.

Here is a happy combination of basic principles and practical applications, of value alike to the student, the physiologist, and the practicing physician in any line of work.

Conybeare: Textbook of Medicine

TEXTBOOK OF MEDICINE. *By Various Authors. Edited by J. J. Conybeare, M.C., M.D. Oxon., F.R.C.P., Physician to Guy's Hospital, London. Third Edition. Baltimore: William Wood and Company. 1935. Price, $7.00.*

There is a definite place and need for something between the elaborate and exhaustive "systems" of medicine, and the terse and sketchy quiz compends and synopses. This

well-edited compilation is such a book. It covers the whole field, clearly and concisely, without undue verbiage, and is written in a style that makes easy reading. The type is of good size; capitalized and bold-face subheads facilitate reference; and instructive illustrations are introduced where required. The chapters on metabolism and the endocrines are especially good.

While this compact, practical, and reasonably-priced volume will be of peculiar value to medical students and interns, there is scarcely a general clinician in the country who could not read it through with great profit, and then refer to it every day, as it gives a condensed presentation of medical practice as it is *today*.

Brahdy & Kahn: Trauma and Disease

TRAUMA AND DISEASE. *Edited by Leopold Brahdy, B.S., M.D., Physician in charge of industrial diseases and accidents in the office of the corporation counsel of the city of New York, New York City; and Samuel Kahn, B.S., M.D., Medical examiner in the bureau of workmen's compensation of the Department of Labor, State of New York, New York City. Illustrated. Philadelphia: Lea & Febiger. 1937. Price, $7.50.*

This work is a symposium to which twenty-four recognized authorities have contributed their knowledge of the relations between trauma and diseases with which they are most familiar. It shows the effect of a single trauma—either physical or psychic—in producing disease and in influencing its course. It supplies the physician confronted with the problem of etiology, with definite facts based on pathologic, clinical, and laboratory investigation. It is on such data that he should rely, rather than on the information derived from previous court decisions. For these reasons the editors have selected as contributors eminent teachers and specialists in individual fields of medicine, rather than physicians specializing in socalled medico-legal practice. This book presents authoritative data from which more accurate opinions may be formulated.

With the constantly increasing scope and importance of industrial medicine, it is essential that, not merely those engaged in that type of work, but all physicians, should be informed regarding the problems which arise. This is a volume to be read for general instruction and referred to for specific information.

Hoffman: Cancer and Diet

CANCER AND DIET. With Facts and Observations on Related Subjects. *By Frederick L. Hoffman, LL.D., The Biochemical Research Foundation of the Franklin Institute, Philadelphia. Baltimore: The Williams & Wilkins Company. 1937. Price, $5.00.*

This book is a careful scientific survey of the subject of cancer and diet and tells the results statistically under each food or group of foods. It is based, not only on the extensive international literature and study of the dietary customs of various native populations, but also on careful analysis of 2,000 questionnaires obtained by interviews with cancer patients at hospitals in several American cities. Those who are interested in cancer will want this book.

The author, Dr. Hoffman, is not a physician, but is world famous as an expert in vital statistics, long a vice-president of the Prudential Insurance Company of America, and personally active in the campaign against cancer for many years. He has written extensively on the subject, taken part in numerous cancer conferences in several countries, and was director of the San Francisco Cancer Survey covering a period of several years.

This is not a clinical treatise, but a sourcebook of factual information which should be in every public medical library for reference, and in the private libraries of all cancer researchers and others who are interested in cold figures on the subject.

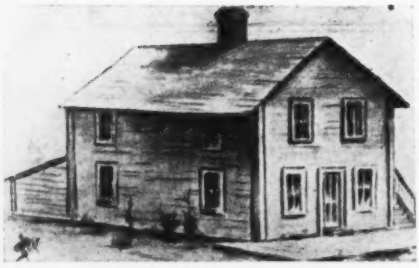
Levinson & MacFate: Laboratory Diagnosis

CLINICAL LABORATORY DIAGNOSIS. *By Samuel A. Levinson, M.S., M.D., Director of Laboratories, Research and Educational Hospitals, Chicago, Illinois; Associate Professor of Pathology and Bacteriology and Assistant Professor of Medicine, University of Illinois, College of Medicine; and Robert P. MacFate, Ch.E., M.S., Assistant Director of Laboratories, Research and Educational Hospitals, Chicago, Illinois; Associate in Pathology and Bacteriology and Instructor of Physiological Chemistry, University of Illinois, College of Medicine. Illustrated with 144 engravings and 13 plates. Philadelphia: Lea & Febiger. 1937. Price, $9.50.*

This volume is unusual, among texts in its field, in that it offers not only a satisfactory review of clinical laboratory diagnosis, but presents special chapters on laboratory procedures in legal medicine and toxicology, in pediatrics, and in similar subjects not usually included in a book of this character. It provides a rapid review of the entire field, correlating the didactic subjects with clinical diagnosis. The technic for obtaining and examining the various materials is given and the pathologic findings are compared with the normal. Brief reviews of anatomy, physiology, biochemistry and of the outstanding diseases aid the intern and the practicing physician in the study of those cases requiring laboratory methods. Throughout there is the closest correlation of clinical symptomatology with laboratory findings. Brevity has been maintained without any sacrifice of clearness or continuity of thought.

Laboratory technicians, students, nurses, and general clinicians who do their own laboratory work will find this book of great practical assistance. All physicians should know enough about laboratory methods to check and interpret the reports they receive.

MEDICAL NEWS



The First Home of Rush Medical College.
Courtesy *Presbyterian Hosp.* [Chicago] *Bulletin.*

Centenary of Rush Medical College

IN February, 1837, when Chicago was a village of but 3,000 inhabitants, a young doctor, by the name of Daniel Brainerd, who had been graduated from Jefferson Medical College three years before, and had been editing the village's first newspaper for a year, obtained a charter to establish a medical school to be named in honor of Dr. Benjamin Rush. Dr. Brainerd gave some lectures in anatomy and surgery that year, but the school was not in full operation until 1843, with a faculty of four—Drs. J. V. Z. Blaney, M. L. Knapp, and John McLean, besides Dr. Brainerd himself.

This year we celebrate the centenary of this great School, which in the past century has sent out 10,129 well-trained physicians, many of whom have achieved national or world-wide fame.

The picture above shows the building where the first regular sessions of Rush Medical College were held—Dr. Brainerd's office building, located on Clark Street near Randolph. The shed at the back was used as a dissecting room.

Prize Articles on Edwenil

IN the March, 1936, issue of CLIN. MED. & SURG. we announced that Spicer and Co., manufacturers of Edwenil, would give a prize of $1,000 to the author of the best clinical or research article published during that year, confirming or disproving the claims made for that product.

The returns are now in, and the contest must have been a close one, because the prize money was divided, but both prizes went to *clinicians*, and the winning articles were published in this Journal.

The major prize of $750 was awarded to Leo Saxon, M.D., of Chicago, for his two complementary articles which appeared in our July and December issues for 1936; while the minor prize of $250 went to Frank W. Porterfield, M.D., F.A.C.S., of Waterloo, Ia., for his article in our October, 1936, issue. We offer our congratulations to the winners.

This goes to show that there are excellent opportunities for sincere clinical research workers, as well as for the men in the laboratories.

New Cancer Research Fund

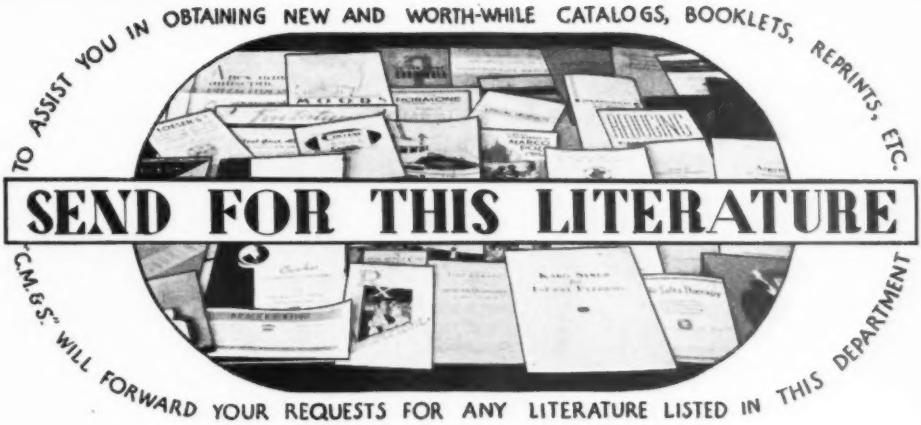
THE new Finney-Howell Cancer Foundation, in Baltimore, financed by the will of the late Dr. George Walker, is so arranged that the entire principal and interest are to be expended in ten years for *actual work*, not buildings and equipment. Whenever a hopeful idea in cancer research, and a man to carry it out, can be found, this Fund will provide fellowships paying $2,500 a year, or grants-in-aid if that whole sum is not required, and the work will be done in any laboratory or university in the world which is approved by the board of directors.

Glycerine in Medicine

WHILE the large and growing importance of glycerine in many branches of medicine and pharmacy is known to everyone in a general way, it remained for Milton A. Lesser, a research chemist, in collaboration with John R. Murphy, M.D., to make the first extensive survey of the subject. Their report, entitled "Glycerine: Its Rôle in Medicine," published in three installments by the *American Professional Pharmacist*, has just been made available as a reprint brochure by the Glycerine Producers Association.

The Lesser-Murphy report lists examples of standard preparations, non-official remedies, and therapeutic procedures in which glycerine plays a part, in many instances giving detailed descriptions.

Physicians and pharmacists may obtain a copy of the report free of charge, on request, from the Glycerine Producers Association, 381 Fourth Avenue, New York City.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F- 6 Dr. Weirick's Sanitarium. Dr. G. A. Weirick.

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F- 9 Elixir Bromaurate in the Treatment of Whooping Cough and other Cough Disorders. Report of Cases. (Booklet.) Gold Pharmacal Co.

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F-20 Hyperol. A Utero-Ovarian Tonic and Corrective. Purdue Frederick Co.

F-21 Gray's Glycerine Tonic Comp. Purdue Frederick Co.

F-23 Danish Ointment. Reprint *J. A. M. A.* Acne Rosacea. The Original 24-Hour Treatment for Scabies. The Tilden Co.

F-25 Clinical Guide for Female Sex Hormone Therapy. Schering Corp.

F-26 An Outstanding Advance in Ulcer Therapy. The Wilson Labs.

F-27 Reducing Diets and Recipes. Knox Gelatine Laboratories.

*F-28 Dermatomycol for the Treatment of Skin Diseases Due to Fungi. Ernst Bischoff Company.

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